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A Lecture
ON
VAGAL AND VASO-VAGAL ATTACKS.

Delivered at the National Hospital for the Paralysed and Epileptic on May 21st, 1907,

BY SIR WILLIAM R. GOWERS, M.D. LOND., F.R.S.,

CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL, ETC.

GENTLEMEN,—The term "vagal attacks" is, no doubt, unfamiliar to you. It seems a useful designation for prolonged seizures, the symptoms of which consist chiefly in disturbance of some of the functions of the pneumogastric, for the most part sensory and subjective. Similar attacks have been described by Pierre Bonnier as "syndromes médullaires."[1] With the vagal symptoms there is often combined a slight mental change and also disturbance of the vaso-motor centre causing constriction of the vessels and coldness, especially of the extremities. Associated with the latter may be some sensory impairment and sometimes also a form of slight tetanoid spasm. These features vary much in relative proportion, so as often to obscure the relative resemblance. When the vaso-motor spasm preponderates the case may seem to differ from the type more than it really does. Such cases may be termed "vaso-vagal." The attacks are never really brief; they seldom last less than ten minutes and more often continue for half an hour or more. There is a sudden onset of slight symptoms, rapidly increasing, and the ending is gradual. The seizures recur at varying intervals, often for months or years.

Women suffer far more frequently from these attacks, but they are also met with in men. This, and the fact that the pneumogastric and vaso-motor systems are readily influenced by emotion, has probably led to the submergence of these attacks beneath the vague conception of hysteria, a conception which conceals whatever it covers. You must rescue from it whatever you wish to study. You can put it back again afterwards if you like. Before describing to you some of the cases I have met with, the special symptoms may be briefly considered.

The vagal symptoms are chiefly sensations referred to the stomach, the respiratory system, and the heart. At least, we may probably ascribe to the gastric nerves a sensation referred to the epigastrium, described as a sense of oppression or of fulness, but often indescribable. It begins suddenly, irrespective of the state of the stomach or of its functions, and often seems to ascend to the chest, very seldom to the throat or head, as does the aura of epilepsy. There is seldom nausea and never vomiting. Even more common, especially as an early symptom, is a sense of respiratory distress, of difficulty in breathing. It is sometimes so intense as to amount to orthopnœa and to compel the sufferer, if lying, to sit upright, although there is no corresponding sign of impairment of breathing. With this may be combined cardiac symptoms, discomfort, acute pain in some cases, often a sensation of sudden stoppage of the heart, followed by rapid action. With the dyspnœa, or the cardiac sensation, or both, is often associated a sense of impending death, so intense that no recollection of its falsity in preceding attacks prevent the conviction of its present reality. It naturally causes alarm, but apart from this there is sometimes a sense of intense fear and dread, which is recognised to have no adequate cause.

Although there is no impairment of consciousness in typical cases, a peculiar slight mental state is common, and may even be the first symptom. It is generally described as a difficulty or slowness of mental operations, a difficulty in thinking or in concentrating attention. Trifling as it may seem, it always begins suddenly and strikes the patient as a state quite unlike the normal condition. Sometimes it involves a slowness in speaking but this seems partly due to the sense of dyspnœa. Perhaps allied to this, is a sudden sense of physical fatigue, which also is often an initial symptom.

The vaso-motor spasm sometimes attains a high degree. To it the symmetrical coldness is certainly due, for the pulse becomes small at the same time. When general, there is pallor of the face. Shivering is common and may amount to a definite rigor, but this occurs when the coldness is beginning to lessen. With the coldness of the extremities tingling and numbness in them are often described and sometimes there is the tetanoid spasm we shall consider later.

CASE 1.—A fairly typical case was a single woman, aged 28 years, whose cousin was epileptic. She had suffered for nine months from attacks that were heralded by occipital headache on waking in the morning. Some time in the forenoon she suddenly found that she could not fix her attention on any subject. After this had lasted an hour or so a sense of sleepiness came on; then suddenly she felt wide awake with an intense sense of fear, extreme coldness of the hands, feet, and legs, and inability to move. Presently a peculiar, indescribable sensation was felt at the epigastrium and back, sometimes with slight nausea. After a few minutes of this, violent beating of the heart set in, accompanied almost at once by an intense sense of suffocation. If lying she had to sit up to breathe, though there was no evidence of dyspnœa. Then the attack subsided, as a flush developed, attended by slight perspiration and a flow of tears (without any sense of emotion). The flush was accompanied by a sense of warmth, beginning in the head and passing to the arms, but with this there was always a slight distinct rigor. The teeth would chatter and the hands would shake. It was greater the more severe the attack. This soon ceased and she was well. During the attack there was a curious sense of unreality in all she saw and afterwards objects were blurred and indistinct. Some more severe attacks began with tingling in the hands and arms, face, and trunk; the epigastric sensation developed to definite nausea: the general coldness was extreme, "as if made of stone," and the violent action of the heart was preceded by a feeling that it had stopped and that she was dying.

CASE 2.—The case I have next to mention is remarkable in its features, although the true vagal symptoms are subordinate to the disturbance of the vaso-motor system. It is notable also from the fact that the subject of such pronounced attacks was a man, an officer in the army, aged 30 years. Two of his sisters were insane. The seizures were not frequent; they had occurred about once in six months for 12 years, ever since he was 18 years old. Their character was always the same, such as one of which I saw the later part. Earlier in the day he had been in specially good spirits, an antecedent often noted. Quite suddenly, a dreamy mental state came on, a reminiscent state, the well-known feeling that whatever was happening had happened before. It was not momentary as in epilepsy, but went on. With it, or just after its commencement, his hands and feet became cold; his own belief was that the mental state was first noticed. With the coldness, his face became increasingly pale and physical prostration set in, speedily reaching such a degree that he was scarcely able to move. If he tried to sit up he fell back at once. His extremities became icily cold, even to an observer. So great was the prostration that he could only utter one or two words at a time with an effort (apparently from the respiratory difficulty in phonation). His pulse became smaller and smaller, until it was hardly perceptible. There was not a moment's loss of consciousness throughout. His own sensation was that he was dying, gradually passing out of physical existence. This state lasted about half an hour and then he gradually became aware simultaneously that his mental state was improving and that his feet were a little less cold. The amelioration went on, but two or three minutes after its commencement a distinct rigor set in, with shivering and chattering of the teeth. It lasted about two minutes and always occurred at this stage, coincident with gradually increasing warmth. A few minutes after the rigor an urgent need for micturition was felt and went on during the rest of the day, a large quantity of limpid urine being passed. No sense of undue warmth or rise of temperature followed the attack; indeed, he continued pale for the rest of the day. Treatment arrested the attacks almost at once (as will be presently mentioned) and 17 years afterwards I ascertained that his recovery had been enduring. Although he had been in India and had suffered from malaria before the age of 30 years, this could not have been the cause of the rigor, because it was a feature of the attacks from the beginning, before he entered the army.

It is instructive to compare these two cases. Although isolated vagal symptoms were not conspicuous in the second, both present certain features in common—an initial slight mental change, the sense of impending death, the coldness,

[1] Pierre Bonnier: Le Vertige.

and the shivering as this was beginning to lessen. While it may be thought possible that in some vagal cases I shall mention the feeling of coldness may have been a sensation only, independent of the vaso-motor system, in this case it cannot be thus explained. The vaso-motor derangement was obtrusive and we shall see that in other instances it was equally clear. Whether the physical enfeeblement was due to the participation of the brain in the vascular spasm we cannot say; the general character of the case suggests it. The difficulty in speaking, if of respiratory origin, is another point in common with other cases. When these have been described and considered I think it will not be doubted that this case is closely allied to the others.

CASE 3.—Let me mention, as briefly as I can, some other examples of vagal attacks. The sense of impending death, so frequent in severe forms, seems connected with disturbance sometimes of the cardiac, sometimes of the respiratory functions of the vagus, or with both. In its cardiac associations it naturally arouses a suspicion of angina pectoris. It did so in a man of 39 years, who had suffered since the age of 33 from occasional momentary giddiness, even when sitting still, suggestive of the slightest form of minor epilepsy. Six months before he was seen these ceased and were replaced by peculiar and more prolonged attacks. First he felt a sensation of slight pricking in his hands and feet, combined with a cramp-like feeling; they became colder and colder, and his face grew pale. After about a minute he felt at the heart a peculiar sensation, which he could not describe, accompanied by intense fear and a feeling that he could not get his breath. So intense was the sense of distress that he "hardly knew where he was," but he was certain that he never lost consciousness. After about five minutes in all the attack gradually passed away. The fact that no pain attended the sense of thoracic distress is a sufficient distinction from true angina pectoris, for which it had been mistaken. Sensations are often called pain which careful questioning shows to be different, and this always implies a different significance.

CASE 4.—The two cases that follow are of similar character. They exemplify, moreover, a relation of these attacks to preceding migraine which is not uncommon. A married woman, aged 47 years, with gouty heredity, had suffered from characteristic migraine as long as she could remember. For two years she had been liable to peculiar attacks at intervals of a few days or longer, even as much as two months. A distressing sensation at the epigastrium, described as "fulness" or "oppression," came on quite suddenly and ascended to the middle of the chest; it was attended by an extreme sense of prostration, but there was no pain or nausea. Her heart became excited and her pulse, usually 90, rose to 120; the face became pale, and the extremities cold and clammy; the were hands so insensitive that she could hardly feel what she touched. There was no impairment of consciousness and after ten minutes the attack gradually passed off.

CASE 5.—In another woman, aged 52 years, also subject for long to migrainoid neuralgia, attacks occurred which began with a sense of dyspnœa followed by coldness, especially of the feet, and a sense of "numbness" which passed up the legs and body and involved the arms. The hands became dusky and fixed, with the fingers flexed. Sometimes she was unable to speak for a few minutes. The attack lasted about half an hour and ended gradually.

Coldness in the extremities is often, as I have said, attended by tingling in them and some defective sensation and also by a tendency to tonic spasm. The last is like that of tetany except that the posture of the fingers is different from that of typical tetany, the fingers being flexed at all joints, a position sometimes assumed in the ordinary form. This spastic feature is conspicuous in some vagal attacks apart from vaso-motor spasm.

CASE 6.—One case in which it was marked had given rise to much doubt regarding its possible epileptic nature. A lady, aged 25 years, had married at 19 years of age and had borne five children during the next four years. The attacks began after phlebitis subsequent to her last confinement, at the age of 23 years, and had continued since, sometimes as frequently as two or three each week. Each began by a sense of difficulty in breathing and coldness in the hands, with some tendency to contraction in them. In a few minutes pain was felt at the heart and the sense of dyspnœa increased and there was a slight flush on the face. From the onset objects seemed far away, and sounds faint and distant; she was also conscious of an inability to think and a difficulty in finding words; "it was a bother to speak." In one which I saw she uttered only two or three words at a time, as if she could not get enough breath for speaking, and her aspect was distressed. In this there was no evident contraction of the hands but she was constantly trying to bend back the fingers of one or the other hand, as if from a feeling of cramp in them. Severe attacks began with deep breathing and sometimes the sense of dyspnœa compelled her to sit up, with deep flushing of the face but no duskiness. The hands became very cold, with strong flexion of the fingers. The duration was from five minutes to a quarter of an hour. She never lost consciousness, even for a moment.

The symptoms of this case are typical, and the conscious difficulty in thinking, as an early symptom, is of interest in connexion with the similar symptom in Case 1. The symptoms were peculiar in the dominant tetanoid contracture, which was out of proportion to the vaso-motor spasm. I learned later that the attacks gradually lessened until she became almost free but were subsequently renewed by an alarming carriage accident.

CASE 7.—An instructive connexion between ordinary paroxysmal tetany and the vagal form was presented by a married woman, aged 31 years. A year before she had a long attack of gastric catarrh, with vomiting, in the course of which she had a severe attack of tetany, lasting six days, accompanied by elevation of temperature to 102° and 103° F. and a feeble pulse. The fingers were in flexion at all joints, as is sometimes the case in the ordinary form. The gastric symptoms passed away but she had another attack of tetany a month after, much shorter, a third three months later, and a fourth after another four months. The latter two attacks lasted only a few hours. Each began with an unpleasant sensation at the epigastrium, followed in a few minutes by contraction on both sides of the face, with the mouth open; the tonic spasm passed to the arms and hands and down the legs to the feet, which were fixed in extension, the fingers being flexed. As this developed, the epigastric sensation passed to the thorax generally and became intensely distressing, giving the impression that she was about to die. Brief remissions occurred during the attack, which, after a few hours, passed off in the opposite order to that of the onset. For some days before an attack she experienced, for a few minutes at a time, slight premonitary symptoms. A brief sensation at the epigastrium, with some nausea, seemed to her to pass into the limbs and to cause slight rigidity in them. These symptoms occurred without relation to food or external circumstances. In the severe attacks the passage of the sensation to the thorax was not attended by dyspnœa and the sense of impending death was not apparently the result of spasm but resembled that experienced in severe vagal attacks.

RELATIONS TO EPILEPSY.

The cases I have described present no definite relation to epilepsy. The symptoms were deliberate, slow in evolution, unlike the sudden flash-like character of the elements of the epileptic attack. But we meet with cases that seem to connect the two classes and to establish the position of even the vagal attacks in the borderland of epilepsy. The features of such cases must be individually studied, for they do not admit, at present, of clear generalisation.

CASE 8.—One patient, when a girl of 13 years, began to have attacks at intervals of a day or a week. Each began with a sudden feeling of intense fatigue and giddiness—a sensation that objects were moving swiftly to the left and changing in colour to purple and red. The feeling made her inclined to fall, but in a few seconds it was over. Note that the colours, as well as the initial sense of fatigue, distinguish the attacks from simple vertigo. She had also occasional severe headaches, without sensory prodroma. These went on until the age of 16 years. She was first seen then, but not again until she was 28 years old. She had married in the meantime and the attacks, which had ceased after she was seen, subsequently recurred in a somewhat altered form, which is peculiarly instructive. Each began as before by a sudden sense of fatigue, which was not followed by the sense of movement and of colours, but by a second's loss of consciousness; sometimes this was only loss of sight, a moment's sudden absolute blackness. These made more emphatic the epileptic nature of the attacks. After another year their character had again changed. The sudden sense of fatigue was followed by yawning, several times repeated, and then loss of consciousness for a second or two,

after which she was well. But she did not always thus lose consciousness; sometimes the yawning was followed by a sense of want of breath amounting to distressing suffocation and also by a sensation of peculiar distress below the heart. The effect of these was to make her feel that she must keep perfectly still or she would faint. If she kept quiet the sense of suffocation continued for an hour, or even for two hours, before subsiding, but at any time during its course it might be suddenly ended by a moment's loss of consciousness. The attacks came on when awake or asleep, but if sleeping they were always of the early brief form. She waked up with the sense of fatigue, at once lost consciousness for a moment, and was better. By day they often occurred when sitting still, but sometimes they were excited by rising suddenly from the sitting posture. The brief attacks were clearly epileptic. In those of long duration a vagal symptom was interposed, the respiratory and cardiac distress, which endured for long, but was at any time terminated by a moment's loss of consciousness; this seemed at once to relieve the state of brain tension that caused the distress. We can perceive the mysterious relation, although we cannot explain it. The important fact for our present subject is the interposition of prolonged vagal symptoms in the course of an epileptic attack, as if symptoms, usually momentary, as the aura of epilepsy, became protracted, extended as it were, into a vagal attack.

CASE 9.—The following case is similar but differs in that the loss of consciousness did not end the attack but was interposed between the vagal and the vasal symptoms. A married woman, aged 35 years, without neurotic heredity, had suffered for two years. The attacks occurred at intervals of ten days to two months, always without excitant, often when sitting still. A sudden intense sense of suffocation, with a feeling of tightness in the head, was followed, after a minute or so, by a moment's complete loss of consciousness. On its return she felt cold, first and most in the extremities. The coldness was so intense that it made her shiver. After about ten minutes she burst into perspiration and simultaneously her heart began to beat violently and the symptoms slowly subsided. Most attacks were similar, but she occasionally had one that was much slighter and consisted only in a brief sense of suffocation.

CASE 10.—With the last case it is instructive to compare another. A woman, aged 28 years, had suffered from attacks for three years, at first at intervals of two or three months, then more often, until of late she had two a week. A sudden sense of great fatigue, succeeded by coldness, was followed in a minute or two by dimness of sight and then loss of consciousness, so sudden as to cause a fall, always backwards. There was no convulsion. After five minutes consciousness began gradually to return. First she could hear loud sounds, then voices, at first indistinctly. Then objects could be seen as in a fog, afterwards clearly. The process of slow recovery occupied about half an hour. But the most significant fact is that she had also slighter attacks with no loss of consciousness, lasting half an hour and closely resembling those of "vagal" character. There was a sudden sense of dyspnœa, respiratory distress, and of faintness, accompanied by a sensation of coldness, especially in the face, on which "icy air seemed to be blowing." Sight became rather dim, and when it slowly returned objects seemed unreal, "as if in a picture." Thus the patient seemed to suffer from epileptic attacks and also from those of the class now considered, but the two were not entirely disconnected in their features.

The case I just now described, in which prolonged respiratory distress was instantly terminated by a moment's loss of consciousness, is suggestive for another reason. We must regard it as epilepsy, but it was a minor attack extended, protracted, drawn out as it were, so that the initial sensory stage, instead of being momentary, often continued for a long time. It might even subside without the usual loss of consciousness. It is foreign to our thoughts to conceive the idiopathic epileptic attack as capable of extension, and yet we know that the aura varies in length and we have no reason to believe that it cannot be prolonged. In local attacks from organic disease, we meet with some that are prolonged, either as sensory discharge or as clonic spasm. The slighter attacks may sometimes endure for a quarter of an hour or longer. In these the tendency for consciousness to suffer is not great. In vagal attacks the symptoms, respiratory and cardiac, which are gone as soon as felt in a true epileptic seizure, seem to be most distressing when prolonged. This can readily be conceived. Full perception is not momentary and with time there seems to be what physiologists term a "summation of sensation," even of that which is purely subjective.

These facts suggest that if we can conceive a minor epileptic attack that is extended, its elements protracted, with no tendency to be terminated by loss of consciousness, its features would be so different that its nature would not be suspected. Velocity altogether alters the effect of momentum. A bullet fired from a rifle makes a round hole in a pane of glass, which it would smash if thrown against it. Velocity is an essential element of ordinary epilepsy, but this does not preclude the possibility of deliberation in attacks not far removed from epilepsy.

I will conclude with the description of an attack of slow deliberate character which has some features in common with those that merit the term "vagal," and yet differs from them in its more pronounced subjective emotional distress. It is easily regarded as hysterical, but even then its features deserve consideration.

CASE 11.—The subject was a married woman, aged 35 years Her nervous system was unstable and excitable in a high degree, such as to suggest any kind of hysterical disturbance. Yet throughout her life she never had any ordinary hysterical attack. She was apprehensive of evil in a degree that made her life distressing to herself and perplexing to others. In childhood she had some attacks that seemed to be definite *petit mal*, with loss of consciousness so sudden as to cause her to fall in each. They ceased after childhood, but there were subsequently occasional, but rare, threatenings. When 33 years old she had another definite minor seizure; there was a sudden sensation of intense coldness at the vertex; she instantly fell unconscious, but at once recovered. The special attack with which we are concerned occurred two years later, after some mental anxiety. She was feeling well, and was occupied as usual, when she had a sudden strange sensation that her mind was acting slowly; an effort was needed to understand what was said to her. This difficulty increased and extended, so that in a quarter of an hour all about her seemed strange and unfamiliar, and an observant nurse who was present averred that for a short time she clearly did not know where she was. She walked into the garden but became worse rather than better. Then, quite suddenly, some intense physical sensation occurred which gave her the impression that she was dying. She begged that her husband should be called in order that she might say farewell to him, although he was then far away. This seemed to mark the turning point, for in a few minutes the physical distress lessened and she began to improve, but for an hour more, when spoken to, she seemed to hear the words at once, but could only grasp their meaning slowly and with considerable difficulty. At the end of one and a half hours from the onset she was quite well again. Throughout, the nurse closely observed her and could see no pallor, while her pulse was unchanged in frequency or strength. It was afterwards ascertained that, besides the indications of minor epilepsy already mentioned, she had experienced, many times during her life, and two or three times during the previous year, a sudden sense of strangeness. For a moment she did not know where she was. Once she seized her husband's arm and exclaimed, "Oh, where am I?" but almost as soon as the words were uttered the feeling was gone. This is a familiar form of minor epilepsy. A significant fact is that she recognised the identity of this momentary sensation with that which developed gradually in the prolonged attack. This, as I said, may easily be regarded as hysterical, but its features suggest that its nature was rather that of a prolonged slow cerebral process which, if condensed into a few seconds, might have involved loss of consciousness and have been a characteristic attack of minor epilepsy. It was attended by intense distress to the patient and left her with constant dread of a recurrence, but this had no effect in producing one. If its features are compared with those previously described it will be found to present two characters in common with them. It began with the strange sense of a difficulty in mental processes, which continued, and is, as we have seen, common in vagal attacks. It also presented the sensation of impending death, which was probably produced in some way through the vagal functions. Perhaps the term "psycho-vagal" would be the most accurate designation for such an attack.

TREATMENT.

In the treatment of sufferers from such attacks it is, of course, essential to discover any defect in the general health

and anything in the conditions of life that involves strain on the nervous system and to put these right as far as may be possible. Conspicuous anæmia is not often to be found, but constipation is common and harmful, especially with its attendant indigestion. It is very seldom that any exciting cause can be traced for the attacks that can be avoided but it is important that the patient should be free from all causes of over-fatigue. When an epileptic element can be traced much good is usually obtained from bromide in moderate doses, combined with belladonna or digitalis. Nitrite of amyl deserves a trial at the onset of attacks and a slight inhalation of chloroform if the opportunity presents itself. But in all cases in which there is vaso-motor spasm the regular administration of nitro-glycerine is by far the most useful agent. Taken regularly, although no effect may be perceived from it at the time, it seems to exert a permanent, steadying effect on the vaso-motor centre, and strychnine may be combined with it with advantage. A striking instance of its effect was presented by the patient with such severe coldness and prostration (Case 2). In his own words it seemed to act "like a charm." He had no other attack and after taking it regularly for many months it seemed to leave him free from any tendency to those which had gone on for 12 years. Nerve tonics, such as phosphorus, quinine, and valerianate of zinc, are sometimes useful.

ABSTRACT OF

An Address

ON

THE NATURE OF INFECTIVITY IN RELATION TO TUMOUR GROWTH.

Delivered in the Section of Pathology and Bacteriology at the First Australian Dental Congress, Sydney, in February, 1907,

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The infective nature of tumour growth.—When bacterial cells gain access to the animal body one of two things may happen—either they are antagonised and are killed off by the defensive mechanisms of the tissues or the resisting powers of the tissues are overcome by the numbers and virulence of the bacteria. In the former case the bacteria disappear from the body and no infection occurs; in the latter case the bacteria thrive and multiply in the tissues and the animal is said to become infected. The essence of the process of infection, therefore, is that the bacterial cells concerned have entered the tissues and have begun to multiply there. A disease which depends upon the proliferation and multiplication of alien cells within the animal body is termed an infective disease, and if, in addition, the disease is capable of being transmitted from one animal to another (by transference of the infective cells) it is spoken of as infectious. A disease may thus be infective—that is, due to invasion and proliferation of hostile cells—without being infectious—that is, transmissible to other animals. To this category, as we shall presently see, cancer may be said to belong.

For our present purpose the ultimate unit in a cancerous growth may be taken to be the individual cancer cell, and although each cancer cell is the direct descendent of some pre-existing cell within the organism in which it grows, nevertheless the cells of a cancer become at a very early stage differentiated and sharply marked off from all the other cells of the organism. Whereas the cells of the healthy animal body are all working for the common good, the growth and activities of each tissue and cell being so conditioned and regulated as best to attain this end, the cancer cell appears as a seceder from this commonwealth. The growth of cancer proceeds independently of, and, indeed, at variance with, the requirements of the organism and, further, the regulated and orderly growth of the parent tissue is exchanged for the unregulated and disorderly growth of the tumour. The absolute nature and extreme degree of this two-fold independence—independence of the needs of the organism and independence of the laws of tissue growth—are the basis of that hostility so characteristic of cancerous tumours. Although bearing a most intimate developmental relationship to the cells of the parent organism or tissue the cancer cell is essentially hostile, just as hostile, for example, as bacterial cells may be when they effect a lodgment in the tissues.

There is yet a third manifestation of independence exhibited by cancer cells, inasmuch as they grow independently of one another. Particularly is this the case at the advancing margin of a cancerous growth, where any one cell appears to be equivalent to any other, and all are mutually independent. So far as we know any one cell detached from the advancing margin is capable of starting a secondary nodule in another part of the body, and it is as untrammelled in its growth as, in similar circumstances, a pathogenic bacterium would be. There is thus a close parallelism and a suggestive analogy between the general characters of cancer cells and the general characters of bacterial cells. For whatever the ultimate nature of cancer may prove to be, this at least is certain, that it constitutes an invasion of the organism by a brood of independent and hostile cells, and that once these cells have made their appearance within the organism they may undergo a practically indefinite and unlimited multiplication and proliferation. But these are precisely the conditions that go to make up the process of infection, and so we reach the general conclusion that, in a very definite and intelligible sense, cancer is an infective disease—as certainly infective as any disease due to an invasion of the organism by other parasitic cells, whether of bacterial or of animal origin (as in malaria and in trypanosomiasis). This is not a new theory; it is merely a re-statement of accepted facts, marshalled, I trust, without distortion. So far as I can conceive the nature of cancer growth, this attribute of infectivity is fundamental and the recognition of it is independent of any hypothesis that may be formed regarding the origin of cancer. To my mind, also, a due appreciation of the infective nature of cancer tends, not to confuse, but to coördinate certain phenomena of tumour growth, such as relative malignancy, which otherwise are hard to apprehend.

One hypothesis regarding the origin of cancer, widely known as the "parasitic theory of cancer," is suggested by the analogy between cancer cells and other bacterial or animal parasites capable of producing disease. This hypothesis is based on the observation that cancer cells not infrequently contain within their substance peculiar bodies, "cell-inclusions," which bear a more or less close resemblance to certain low forms of organised life. It is assumed that these appearances represent stages in the life-history of some parasitic micro-organism which has invaded the cancer cell, and it is suggested that the malignant proliferation of cancer cells is induced by some stimulus supplied through the agency of the minute parasites within them. It may be that the cause of cancer will ultimately prove to be some parasitic microbe infesting its cells. As yet, however, this is far from being an established fact, and the hypothesis has the further demerit of being hard to reconcile with some of the known facts of tumour growth. But our point is this, that although the existence of a specific cancer parasite is at the best doubtful, the existence of the parasite, cancer, is beyond a doubt. It is not in the commonly accepted sense, therefore, that I would advocate a "parasite theory of cancer"; what I would emphasise is the fact that the cancer cell is in itself a parasite and is endowed with that formidable attribute of the more highly pathogenic parasites—the attribute of infectivity.

The non-infectious nature of tumour growth.—Two of the most serious obstacles to the scientific study of tumour growth have been the impossibility of originating a new growth by any artificial means and the difficulty of transmitting a new growth from one animal to another. The former has not even yet been overcome, the latter only within recent years. Up to the year 1902 (I am quoting from a previous address of mine on this subject) only a few isolated instances of successful transplantation of tumours from one animal to another had been recorded. The first to achieve systematic success was Professor Jensen, of Copenhagen, whose results were not made generally known until 1903. In the same year Borrel of Paris published another series, and in 1904 there appeared the first scientific report of the Imperial Cancer Research Fund, in which further examples were noted. All these successful results were obtained by transplanting tumours of mice to other mice. In the case of no other animal, with the single exception of

the rat (which is of the same genus as the mouse), has the transplantation of new growths been successful.

Jensen's original tumour growing in a white mouse was regarded by him as an epithelioma. Introduced into other mice it yielded from 30 to 60 per cent. of successful inoculations and it has proved to be one of the most readily transmissible of all new growths hitherto tested. It is still growing, like a pure culture of bacteria, in various laboratories on the continent of Europe, in England, and in America, the medium on which it thrives being successive generations of mice. In its duration of life (five years) it has nearly doubled the natural term of life of a mouse and in bulk it has exceeded that of many thousands of mice. This great power and persistence of growth are equalled only by the natural propagation of successive generations of mice and indicates a source of potential vitality in the cells of the cancer comparable only to that which secures the continuance of the race.

Having regard to these considerations and bearing in mind also that cancers have never been transferred from man to other animals, nor, indeed, from any animal to another of different species, we must admit that the transmissibility of cancer is exceedingly restricted—that, as a matter of fact, it is limited to the occasional experimental infection of one small rodent from another by direct inoculation with living cancer cells. Nevertheless, evidence of endemic outbreaks of cancerous, or cancer-like, tumours among various animals has from time to time been advanced. Hanau and Loeb in rats, Borrel and Michaelis in mice, Cooper and Loeb in cattle, Pick and Bonnet in trout, have each reported instances of the appearance of cancer affecting so large a proportion of animals in one place as to suggest some common source of infection. More recently Gaylord has submitted certain facts which suggest that infected cages may be the source of spontaneous cancer developing among small caged animals, including rats and mice. And, in regard to the liability of the human subject, the existence of "cancer houses" and "cancer districts" in which there occurs a succession or an undue proportion of deaths from cancer has repeatedly been alleged. I would not criticise adversely statements advanced by able and competent observers, which I have no means of testing for myself, further than to point out to you that many cancer-like tumours are admittedly infectious, that they are often hard to distinguish from true cancers, and that much of the evidence above quoted is open to the objection that the tumours either were not examined at all, or were not convincingly differentiated from infectious non-cancerous growths.

In approaching the study of a subject so vast, so elusive, and so occult as that of the nature of cancer we must be particularly careful to keep our minds free from bias and to avoid precipitate conclusions. We must be prepared to admit all evidence on its merits without discounting its significance by reference to our preconceived notions. We must, for example, hold ourselves intellectually in readiness to accept the possibility that cancer may be due to the agency of some parasite or that cancer may be naturally infectious. With this proviso, however, and with the evidence before us, I am bound to confess that, in respect of human forms in particular, I fail to discern any cogent reason for regarding cancer as an infectious disease.

The nature of relative malignancy.—It is customary to divide new growths into two groups—the simple, benign, or innocent on the one hand, and the malignant or cancerous on the other. The more opportunities I have for the study of tumour growth the more am I convinced that all new growths are essentially malignant, though all are not equally malignant. The differences recognisable in their mode of growth are differences in degree and not in kind, and all degrees are possible. The most benign of tumours possesses, though in lesser measure or in modified form, all the fundamental attributes and capacities with which the most malignant new growth is endowed. From a clinical standpoint it is of the utmost importance to be able to say whether a growth is of a low order (benign) or of a high order (malignant) of malignancy; but from a scientific point of view it is no less important to recognise that the distinction does not mark any fundamental difference between the two classes of new growth. Malignancy, as I understand the term, is only another expression for infectivity, an attribute common to all forms of new growth, but developed to a variable degree in different forms. Clinically "malignant" growths are made up of cells whose infective capacity is high; clinically "benign" growths are composed of cells of low infective capacity.

We can best understand how the malignancy of a new growth is determined by its infectivity if we have recourse once more to the analogy furnished by bacteriology. Among infective diseases marked differences exist as regards the distribution of the causal bacteria within the body and as regards their capacity for infection. In some infections the multiplication of the bacteria is localised, and the microbes are restricted to the original site of infection, as in the case of a small local abscess. In other conditions the bacteria are not so restricted, but may extend widely into the adjacent tissues, as in cases of spreading inflammation or suppuration, though they may not appear in the blood or in remote tissues until just before death. In yet other circumstances whether the local proliferation be restricted or extended, the bacteria may show a special tendency to enter the lymphatic or the blood channels and thus to give rise to widely disseminated lesions, as in tuberculosis or in pyæmia. Every one of these types of lesion, apparently so diverse, may be produced by one and the same organism, according as its virulence—in other words, its capacity for infection—is modified.

Now the phenomena of tumour growth present many close analogies to these phenomena of bacterial infection. Some new growths remain localised and their component cells show little or no tendency to infiltrate (infect) adjacent tissues, nor do the growths tend to recur after removal. In others the cells are prone to local infiltration (infection) and the growths to inveterate local recurrence, but they may not give rise to secondary nodules until late in the course of the disease. In yet others the tumour cells, in addition to local infiltration, may have developed a special tendency either to extensive lymphatic infiltration or to invasion of blood-vessels, in the former case originating a widespread lymphatic infection, as in tuberculosis, and in the latter case causing the dissemination of secondary embolic growths analogous to pyæmia. In fact, if for the word "bacterium" we substitute "tumour cell" and for "inflammation or suppuration" we speak of "tumour growth" we obtain a corresponding series of statements which are in accordance with the main facts of tumour growth, and we are in a better position to understand that, just as in the case of bacteria, so also in the case of tumour cells, it is their capacity for infection that conditions the extent and manner of their dissemination within the body. What we denote "virulence" in respect of bacteria becomes "malignancy" in respect of tumour cells, and each expression may, for our present purpose, be regarded as equivalent to "infectivity." The effective malignancy of a new growth, however, may be modified by the physical conditions of its structure. Some of the more malignant forms may be largely restricted to local manifestations of malignancy because of the structural cohesion among the individual cells and the physical difficulty of their becoming detached from the parent mass.

The local and the general reaction.—In many bacterial infections the proliferation of the bacteria induces a local reaction and proliferation of tissue cells which may thus come to form a localised swelling or "tumour." But it is not in this sense that the term tumour is employed in reference to cancers and other new growths. In the so-called "tumours" of bacterial origin the bulk of the bacteria is practically negligible and the mass is made up of proliferated tissue cells and other inflammatory products; whereas in the tumours proper, including cancer and other forms of new growth, the mass may consist almost entirely of the infective tumour cells, although in many cancers the products of tissue reaction may come to bulk more largely than the cancer cells themselves. Other differences between cancerous and bacterial infections may be correlated with differences in the nature of the infecting agent. Thus cancer cells, unlike bacterial cells, are the direct descendants of cells within the organism. Probably on account of this intimate genetic relationship they induce a less marked reaction on the part of the organism than do the alien bacterial cells. For example, while cancer cells may induce a local inflammatory reaction greater than that associated with some bacteria, they do not appear to stimulate that general reaction on the part of the organism which is so prominent and characteristic a feature of most bacterial infections that recovery is the rule and death the exception. The elaboration of anti-substances in response to a cancerous infection is correspondingly defective, no recognisable immunity becomes established, and spontaneous recovery is

exceedingly rare. The fact that the infecting cells of cancer claim kinship with the infected organism may be the cause of the deplorable uniformity with which untreated cases progress to the inevitable end.

The origin of the infective cells.—The probable origin of infective tumour cells within the animal body is indicated by certain biological considerations which we can only briefly pass in review. In the first place we note, from clinical observation in man and from the experimental propagation of Jensen's mouse tumour, that cancer cells are endowed with great vitality and longevity; that, indeed, they appear to possess a reserve of vital energy in excess of that retained by the natural tissues of the body. The second point is that in their manner of growth cancer cells appear to be liberated from the conditions that regulate normal tissue development, that they are a law unto themselves, that they form independent and autonomous growths equivalent to a new individual or rather to a swarm or brood of new individuals parasitic upon their host. Hence, two of the first questions that present themselves are: "Whence this vitality?" and "Whence this autonomy?" A sudden increase of vitality among higher animal cells (of which cancer cells are but a particular variety) is naturally effected by the conjugation of two mature reproductive cells of opposite sex. No other circumstance, so far as we know, is adequate to initiate that new generation of cells which we recognise as a new and independent individual and which alone is endowed with an accession of vital energy. In the higher animals and plants this process of cell conjugation does not take place except between cells specially set apart in the reproductive tissues and specially prepared by a succession of peculiar nuclear divisions, termed maiotic divisions. These nuclear divisions are of so definite a character that they are unmistakeable, and, with a few recognised exceptions, they make their appearance only in the reproductive tissues and only in the cells which are attaining maturity. Now these distinctive forms of nuclear division may be encountered in the dividing cells of early cancerous growths (Farmer, Moore, and Walker). You will at once recognise that this is a most significant circumstance, indicating, as it does, that the cancer cells have assumed one of the fundamental characters of reproductive tissue and that some at least have undergone a process analogous to that which in the reproductive tissues of higher animals is universally found to be an invariable preliminary to cell conjugation. This analogy is reinforced by the further observation that the "cell inclusions" of many cancer cells closely resemble bodies which naturally make their appearance within certain reproductive cells at a certain stage of development (Farmer).

Again, the laws of natural growth are very definite for each tissue and the special laws of any one tissue appear to be equally impressed upon all the cells that develop from it and to form part of their natural heritage. But in the unnatural growth of cancer there is the anomaly of cells descended from tissue cells but growing at variance with the conditions that regulate the development of the parent cells. The only consistent biological explanation of this independence and autonomy would be that the cells differentiated off as early cancer cells should conjugate with other cells inheriting and conforming to other conditions of growth. A truly remarkable fact in the life-history of cancer is that such a process suggestive of cell-conjugation has actually been observed. At all events, an interchange of nuclear matter, which may be regarded as equivalent to conjugation, has been shown to take place between developing cancer cells and emigrated leucocytes (Farmer, Moore, and Walker), and it has also been demonstrated that the leucocyte is peculiar among the normal non-productive cells of the body in having already undergone nuclear divisions peculiar to cells undergoing preparation for conjugation (C. E. Walker). It is possible, therefore, that the fully developed cancer cell may be the offspring of a fixed tissue cell and of a wandering leucocyte, both cells having undergone the nuclear metamorphoses of reproductive tissue. Should this be so it is only reasonable to expect that the resultant cancer cell should participate in the varied capacities of its twofold heritage. Hence may be the reason why the cancer cell, while retaining many of the structural features of the tissue of origin, has come to acquire in so high a degree the additional capacity for wandering, for infiltrating, for infecting.

To recapitulate, then, we find that certain biological phenomena emerge from this recent work on cancer. We find that certain forms of nuclear division appear early in cancer cells, that such nuclear divisions are found only in cells of reproductive tissues preliminary to maturation (and in leucocytes), and that nuclear exchanges (conjugations?) take place between wandering leucocytes and developing cancer cells. Now, can we go further? Can we point to any condition which might predispose a group of tissue cells to assume the character of reproductive cells? As a matter of fact, there is evidence that two conditions are commonly present—one general and the other local—both of which may possibly influence this transformation. The general condition is a chemical change in the reaction of the body fluids. It has been shown that developing cells may be induced to undergo increased and abnormal nuclear divisions when the chemical reaction of their environment is altered and when, in particular, the alkalinity of the medium is increased (Moore, Roaf, and Whitley), and there is evidence that the body fluids of a cancer patient commonly exhibit this increased alkalinity (Moore, Alexander, Kelly, and Roaf). Hence it may at least be said that the body fluids of a cancerous subject are commonly in a condition which independent biological research has shown to be favourable to abnormal nuclear transformations.

The local condition is indicated by the fact that the primary appearance of cancer in any tissue is most frequently associated with the senescence of that tissue. This is not strictly the aging of the tissue but the advent of the period of its functional desuetude. Of the many factors that may be supposed to influence the appearance of new growths the senescence of the tissue of origin is probably the least variable. In all probability, too, the influence of local irritation is exercised in the induction of premature senescence. It is, therefore, not improbable that in some way the senescence of the tissue is related to the appearance of reproductive divisions in certain cells. It is not impossible that, as the period of functional activity draws to a close, the tissue is induced by some obscure biological stimulus to make preparations for self-propagation, which preparations we may designate unnatural or perverted, since they occur in cells not specially set apart for reproduction but which may in reality be the natural expression of a fundamental biological law. It may be that at the root of the cancer process there is this inherent paradox that in trying to achieve immortality for the cells of one tissue it precipitates the death of all.

THE TENTH CONGRESS OF THE PIROGOFF SOCIETY.—The tenth Congress of the Pirogoff Society, a society of Russian medical men, has just been held. About 1000 medical men were present, besides about 2000 invited guests. The President of the society, Professor Rein, opened the proceedings and the President of the congress was chosen in the person of Professor Salaskin, honorary president of the Women's Medical Institute, after which the congress divided into groups to discuss special subjects. It on this occasion celebrated the twenty-fifth year of its existence. The course of its deliberations does not appear to have been marked by any specially noteworthy event and the series of sittings was closed quietly. It was decided to convene the next congress in 1909 at Odessa.

BRITISH HOME FOR INCURABLES.—A festival dinner in aid of the British Home and Hospital for Incurables at Streatham was held at the Prince's Restaurant, Piccadilly, on May 28th, when Lord Cheylesmore presided. In proposing the toast of "The Hospital" the chairman urged the need for wider support from the public. The benefits conferred by the institution were far-reaching and those who received the benefits of the charity were suffering through no fault of their own from incurable diseases. Canon Fleming said that the charity was doing a really pathetic work which commenced where the metropolitan hospitals left off. The British Home for Incurables, which was instituted in 1861, assists those of the middle class who have formerly lived in comfort and respectability but who have been reduced by incurable disease. Besides providing a home for those suffering from incurable disease, it gives pensions of £20 a year to those who are incurable but not wholly destitute, and who desire to reside with their friends. A sum of £15,000 a year is needed to pay the monthly pensions and to maintain the home. Since the institution of the charity, 330 incurable cases had been received in the home and 968 persons had received pensions of £20 a year. Subscriptions and donations amounting to £2345 have already been received as a result of the dinner.

SOME PHYSIOLOGICAL EFFECTS OF HIGH-FREQUENCY CURRENTS IN DISEASE.[1]

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ON the introduction of high-frequency currents into medical practice a great, if not the whole, impetus came from D'Arsonval's laboratory experiments. So much did the results obtained by him lay hold upon the medical mind that men of even ordinary enthusiasm were carried away by them. What, it was asked, could high-frequency currents not do? Whilst we were assured that no harm could result from these currents we were told that by their use blood pressure fell, and then rose, remaining at a higher level, that the amount of urea was increased, that the quantity of urine became greater, that the relation of the purin bases to the urea more nearly approached to the normal where the relation had been abnormal, that the amount of exhaled carbonic acid was higher, that the muscular system was invigorated, &c. The dramatic physical effects appealed also to the ignorant and the excitable, and so there was a boom in this new marvel of therapeutic potency. The whirligig of time, however, as usual, brought its revenge. From high hopes as to its possessing a power to do everything, disappointment followed disappointment, till it became a question with honest men whether it was, after all, worth the time and expense. Was it indeed capable of doing anything? True, some wonderful cures were effected—cures where drugs had failed and where prolonged holidays had failed; and the conclusion seemed justified that, after all, there must be something in it, if only this something could be got out of it. This position of hopeful scientific scepticism was my own, after one or two years' experience of high-frequency currents.

The original experiments on its efficacy on the rabbit, the mouse, and the man in the laboratory had been announced in every text-book, new as well as old. I grew tired of this reiteration and asked myself what physiological effects this treatment might have on the man in the street or the invalid at home; not the physiological effects in health but the physiological effects in disease. When are these therapeutic? When are they pathological effects? How do they act not only on the same patient or in the same disease but in the same disease and the same patient in different conditions of that patient?

The question to be solved is, Why are such gratifying results obtained in some cases and why are the results so disappointing in others? The swing of the pendulum in this case must not damp us. We are all familiar with this stage in the evolution of scientific medicine. Let us simply continue to labour and to wait. My researches, in my opinion, justify me in looking towards the future of electro-therapeutics with more confidence than ever, and with the conviction that we are only now on the fringe of great possibilities. This desirable future will come all the sooner if we, individually and as a society, continue not only to wait but to labour, measuring, measuring, measuring. The early part of my work seemed to promise labour only. I seemed to be merely recording and to be unable to see any useful results from these records. They seemed either to disprove my previous assumptions or to contradict each other. Patience, however, occasionally converted a puzzle and an apparent contradiction into a new discovery, or at least a new theory which sometimes reconciled previous seeming contradictions. Science, like art, is long and life's opportunities are few, so I am, after one year of investigation, able to indicate only some of the physiological effects which in my experience have resulted from these currents in disease. I hope you will test my facts and criticise my inferences.

There has been much stir in our society and in medical journals regarding the question of restriction of electro-therapeutics to members of the medical profession. In the interests of our profession and of the public I sympathise with this movement; but partly from a natural anxiety to be always strictly fair towards rivals and opponents I have never had any strong feeling of opposition towards these unqualified practitioners. I have little fear that our craft may be endangered by them. Let us only do our part towards the public with the same amount of zeal with which some of these unqualified operators do their work, and with all the advantages of scientific training and clinical experience on our side the victory is sure in the end to be ours. I feel inclined to leave the public to find out the difference between us for themselves. I confess that I am often so disgusted and impatient with their credulity that I am tempted to say, as was said of Ephraim: "They are joined to their idols, let them alone." Another word I would say regarding the illegitimate practitioner of electro-therapeutics. Before we attempt to remove the mote that is in his eye, let us make sure there is not one quite as large in our own. If he is zealous in his work and honest in his motives, and if, believing in himself, he feels proud of his many cures where "the Faculty" have failed—and in all fairness we must admit that this was often the case in the past, when electro-therapeutics was looked upon less kindly than it now is by the profession—let us not too readily thank God that we are not as he. Let us see, with all our advantages, that we are more scientific in our methods than he is. If, instead of being scientists, we are only artificers—mere switch-pullers indeed—let us see to mend our ways, and having ourselves a high ethical standard, electro-therapeutics will through us attain to its true and honourable position, whilst we as electro-therapeutists will gain, in the highest sense of the term, in due time. In one point the unqualified and the legally qualified practitioners are alike, and in the present unstable position of electro-therapeutics this is pardonable—nay, it is necessary. Both are, and must be, empirics in the proper and original meaning of the term; both find by experience that electricity in certain forms cures or ameliorates certain diseases or disorders; neither can say exactly how. Of how many of our drugs may this not be said? We, however, must not remain content with this. Ours is to reason why and to find out, if at all possible, why the same treatment sometimes does good, sometimes harm, and sometimes neither the one nor the other where circumstances are apparently similar. Since the date of introduction of the galvanometer much has been done in a scientific direction. The physiological action of electric currents can now be determined more readily, and than the determination of the physiological effects of electric current in disease no work can be more profitable and more interesting. The field is large and the work might well be apportioned amongst the members of this society. For this purpose a committee of investigation might be appointed and valuable work might be done.

Cardio-vascular system.—Few subjects have occupied the time and attention of medical scientists during the past few years more than that of blood pressure, and I have read almost everything that has been written on the subject in our medical journals. Writers differ in their mode of investigation, and, as usual, in their conclusions, yet all have agreed on the importance of this subject. I know, however, of no one who has made independent investigations and has published details of his original research in this department of medicine, from the point of view of electro-therapeutics as apart from electro-physiology. What has impressed me most of all in my study of blood pressure literature is the almost universal dread, expressed or implied, of high blood pressure. It has seemed to me to be something of a bogey to many. Only a few writers have mentioned the importance of having in certain cases a high blood pressure. One of these speaking on high blood pressure in cases of nephritis says: "I do not consider high blood pressure in itself a good thing, but I prefer to see it in the subjects of this disease." Another writes: "High blood pressure is possibly in old age a necessity for the purpose of permeating the less patent channels and stimulating more torpid cells."[2] We must not forget that a low or even in some cases a moderately high blood pressure may mean deficient cardiac force.

The more I have considered the question of blood pressure the more I have come to feel that this dangerous desire to have a low blood pressure requires to be checked. We are apt to forget that blood pressure is the product of peripheral resistance and systolic force. With a given peripheral

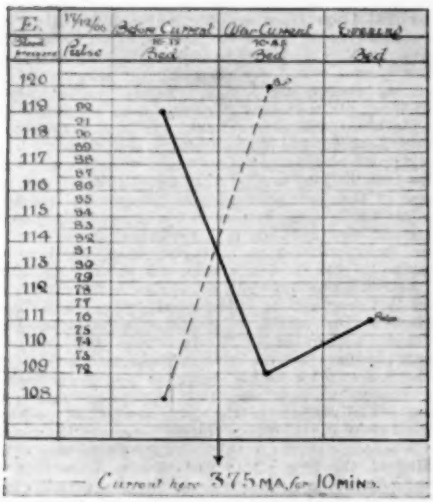
[1] A paper read at the meeting of the British Electro-Therapeutic Society, London, on Feb. 22nd, 1907.

[2] Ewart: THE LANCET, Dec. 1st, 1906, p. 1541.

resistance the greater the systolic force the higher the blood pressure. A reduced blood pressure may mean either a reduction of the resistance or a diminution of the force. While the former result may sometimes be desirable the latter can hardly, unless temporarily and for a special purpose, be an advantage. The danger in cases of high blood pressure—I mean high relative to the age of the individual—is not in the blood pressure *per se*, but in the cause of this high pressure and in the fact that with it there are apt to be some weak points in the arterioles, notably of the brain, when a sudden increase of the *vis a tergo* may determine a fatal result. But a sudden decrease of this systolic force might quite readily cause death as surely by heart failure; especially, as I shall show might happen, after influenza. It will thus be seen that I do not consider high-frequency currents an unmixed good because they are said to cause a fall in the blood pressure any more than I consider the rise in the blood pressure which they are said to cause sometimes necessarily an advantage, since this rise might be due to increase of peripheral resistance only. You will find, however, that I have reason to dispute the statement that these currents do always, after a therapeutic dose, cause the blood pressure to fall. They frequently, indeed, do the very reverse and with much advantage to the patient. And here we see the importance of studying their physiological effects in disease. Let me here show you the apparatus which I have used for these blood pressure experiments. [Dr. Sloan here showed the Hill and Barnard pocket sphygmomanometer and the Riva-Rocci (Martin) instrument and explained his reasons for thinking the former untrustworthy, not only absolutely but also relatively. He had every confidence, however, in the latter as a means of measuring the systolic pressure.] In order to render the records of scientific value the following five precautions are necessary: (1) position of the patient and of the arm always the same; (2) same examining fingers; (3) band applied very loosely; (4) several records taken before current applied; and (5) records taken for each case at the same hour, if possible.

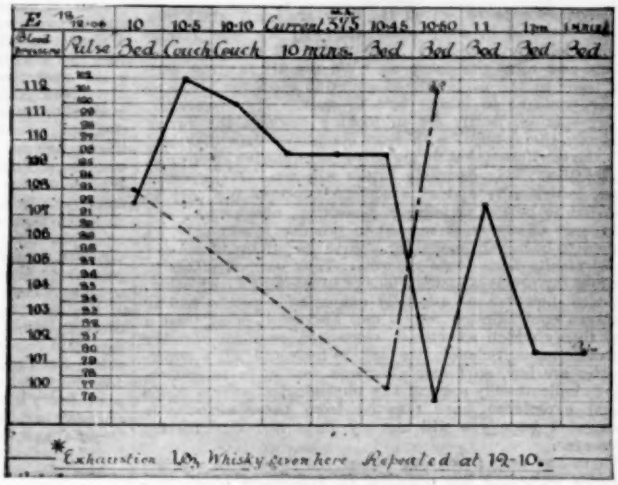
Important changes are sometimes observed in the pulse-rate. Physiologists state that, as a rule, a low blood pressure is accompanied by a quick pulse, and according to mechanical laws one would expect this. I find, however, that in disease this is mainly temporary, the cardio-vascular mechanism adjusting itself sooner or later, according not only to the individual but according to the then condition of the individual. Where the heart becomes seriously disabled the high blood pressure causes a rapid pulse, rapid in proportion to the height of the peripheral resistance and to the degree in which the heart is unable to meet the demand made upon it. I might explain how the pulse-rate is affected under different conditions of peripheral resistance by the following analogy. Let us suppose that three men are required to walk a certain distance in the same time, each being at liberty to choose his own length of step, one taking short and frequent steps, those of another being longer and less frequent, but all going at the same pace. Suppose one of these men to be of ideal strength with abundant neuro-muscular reserve, the second a man of only moderate strength, and the third distinctly below the average in staying power. They are walking against a moderate head wind when suddenly the wind abates. The first man is hardly conscious of any difference in his pace and an onlooker would probably observe no change in it. The second man, when the wind abates, has to step out somewhat more quickly till he recovers himself, when he resumes his ordinary pace, whilst the third man, unless he has been warned of the change in the force of the wind, has to run for some steps and almost falls forward on account of his difficulty of at once adjusting himself to the sudden change. Let the head wind as suddenly increase, and whilst no effect is apparently produced on the pace of the first man the second one will take longer and less frequent steps for a few seconds till he finds what pace will enable him to progress at the required rate with least fatigue. The third man again may even miss a step before he recovers himself. This analogy of the muscular effort of walking against a varying wind resistance in front, to a heart acting against a varying arteriolar resistance is a useful one, and although analogies must not be pushed to an extreme it is as close a one as I can think of. Thus the pulse-rate will depend upon the condition

FIG. 1



Note that the current here has been applied from 10.25 A.M. till 10.35 A.M. The pulse was 92 ten minutes before the application, and fell to 72 ten minutes after the treatment. The blood pressure (B. P.), which was 108 before, became 120 after. These alterations of the pulse and the blood pressure indicate diminished frequency and increased force of systolic action.

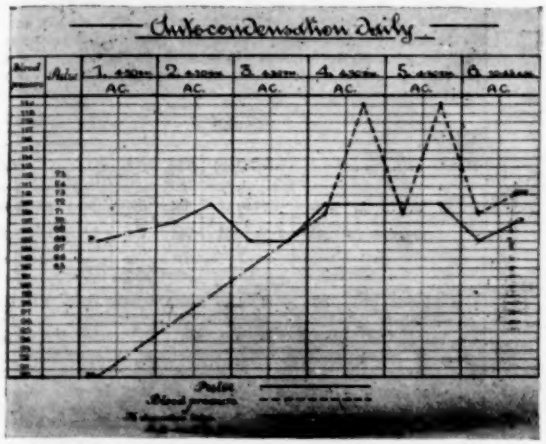
FIG. 2.



Note here the effect of the exertion of going from the bed to the couch in raising the pulse rate from 92 to 102. This was largely owing to previous mental excitement. The result is at first a dangerous lowering of the blood pressure from 108 to 100, though afterwards the blood pressure rose to 112 and the pulse rate fell to 76. An asterisk has been omitted in this figure above the point indicating the pulse rate at 10.45 A.M.

of the cardiac force when the arteriolar resistance varies, at least for a shorter or longer interval after the change of resistance. If the arteriolar relaxation is sudden and the asthenia severe or increased by previous undue exertion the heart may be even seriously hampered. The blood pressure will in these circumstances give an indication of the amount of cardiac reserve. If the heart's energy is only slightly diminished it will maintain the blood pressure at its initial height in virtue of the tonic effect of the current upon it if the dose has not been so strong as to cause excessive relaxation of the arterioles, the relaxation of the arteriolar resistance being exactly counterbalanced by the increase of the cardiac force. I shall give the evidences of this tonic effect on the heart when I come to explain the charts. Should the arteriolar relaxation be excessive the blood pressure may rise, but only if the current is suited to the case and the cardiac force is increased at a greater rate than the arteriolar resistance has been reduced.

FIG. 3.



Here the blood pressure has risen, on account of improvement in the cardiac force, from 90 at the beginning of the treatment to 110 at its close.

TABLE I.

No.	Heart.	Arterioles.	Blood pressure.	Blood flow.
1	Force constant.	Resistance increased.	+	−
2	,, ,,	,, diminished.	−	+
3	,, increased.	,, constant.	+	+
4	,, diminished.	,, ,,	−	−
5	,, increased.	,, diminished.	+ −	+ +*
6	,, diminished.	,, increased.	− +	− −†
7	,, increased.	,, ,,	+ +	+ −
8	,, diminished.	,, diminished.	− −	− +

* Blood flow + whether blood pressure + or −.
† Blood flow − whether blood pressure − or +.

As bearing on the question of the physiological effect of alterations of cardiac force and of arterial resistance the accompanying table from Waller[3] (Table I.) will be interesting and may be helpful. The only portion of this table to which I shall ask your attention at present is combination No. 5. It is obvious that with this combination the effect on the blood-pressure will depend on the relation which the increase of the cardiac force bears to the decrease of the peripheral resistance. No mention is made in Waller's table as to the effects on the pulse-rate and I cannot find any information on this subject from text-books on physiology. A professor of physiology whom I consulted told me that the question was too involved for him to be able to answer it. I have thought it well, therefore, to draw up the following few out of many possible equations, which may help to elucidate this, as well as to show some of the effects on blood-pressure. These, I claim, are reasonable deductions from my charts. It is to be noted that all possible combinations of increase of cardiac force and decrease of peripheral resistance result in an increase of blood-flow. Let x equal unit increase of cardiac force. Let y equal unit decrease of peripheral resistance. Then the immediate effects are:—

$x + y$ = change of blood-pressure, 0; change of pulse-rate, 0.
$2x + y$ = ,, ,, +; ,, ,, − or 0.*
$x + 2y$ = ,, ,, −; ,, ,, + or 0.*

* According to tone of cardiac innervation.

These remarks may pave the way for the following details as to the conclusions to which I have come regarding the effects on the pulse and the blood pressure by these high-frequency currents. I shall illustrate them by screen views of actual results obtained. 1. These currents cause in all cases at first diminished peripheral resistance. 2. In all cases this is followed sooner or later by increased cardiac force when the currents are given in therapeutic doses. 3. The effects on the blood pressure and the pulse-rate of this double action will depend on the cardio-vascular stability. 4. Should this be normal, there may be no change whatever in either the blood pressure or the pulse-rate; only, as may be seen from Waller's table, an increase of blood flow, giving rise to slight elevation of the temperature of the blood. 5. Should there be slight cardio-vascular instability then the diminished peripheral relaxation is only in part compensated by the heart, and so the blood pressure falls slightly and there may be no change in the pulse-rate. (See Table II. (*a*).) 6. On the other hand, should the heart be in a state of asthenia and the blood pressure have been already low on this account, then, if the patient on reaching the couch is for him fairly fresh, there having been nothing to depress or to fatigue just before the treatment, the increase of the cardiac force obtained from the current may so overpower the tendency to peripheral relaxation that the blood pressure rises whilst the pulse-rate falls. (See Fig. 1.) 7. Again, should matters be as in the last case with the exception that the patient has recently been fatigued or unduly excited the heart may be unable to respond to the action of the current, just as the breeze which will fan a steady flame may extinguish a flickering one. The heart may be at first staggered, the cardiac force failing to rise to the occasion; the result will be a dangerous fall of the blood pressure with a relatively high pulse-rate. Any immediately succeeding fatigue, though moderate, may in such a case give rise to the need for stimulants. (See Fig. 2.) 8. The after-effect is, in low blood pressure due to diminished cardiac force prior to the treatment, a higher level of blood pressure. (See Fig. 3.)

TABLE II.

—		Current. Before.	Current. After.	—	Current. Before.	Current. After.	—
12.11.06	Pulse.	88	88	Blood pressure.	170	158	(*a*)
19.12.06	Pulse.	81	68	Blood pressure.	156	148	(*b*)

12 applications from 12.11.06 till 19.12.06.

In this case the age of the patient was 57 years, and the blood pressure, which I took several times to insure accuracy, was so low as to be unique in my experience for that age. With the rise of the blood pressure under the electric treatment the attacks of faintness ceased and the patient's health was completely restored. 9. If the blood pressure be already high, due to the high arterial resistance of albuminuria with somewhat weakened cardiac action, the current will probably have the effect of raising the blood pressure without raising the rate of the pulse. (Table III.) Where the above is the case and from long illness the cardiac asthenia is great, as shown by a high pulse-rate which no medicine is able to reduce, the beneficial effect on the pulse-rate is

[3] Human Physiology, third edition, p. 59.

TABLE III.

—	Before.	C.*	After.
Pulse	85†		84†
Blood pressure	145		180
Temperature—mouth ...	98·8°		99°
,, rectum ...	99·5°		99·4°

* Current 300 milliampères for 10 minutes.
† Soft and small before; much fuller after.

sometimes striking. One such case will be referred to in the part of this paper dealing with the urinary excretion, showing the remote effect of the improved cardiac force on the kidneys. 10. When the blood pressure has been high for the individual's age and there is no apparent disease to account for it, I have observed that after several applications of the current the blood pressure is diminished and there is a corresponding improvement in the pulse-rate. (See Table II. (*b*), also Table IV.)

TABLE IV.

14/11/06.			C.*	
Pulse...	72	74		76
Blood pressure	118	118		110
Temperature—mouth... ...	98°	98·8°		99°
,, rectum... ...	99·8°	99·4°		99·4°
,, room	70°	70°		70°

* Auto-condensation current 500 milliampères for 15 minutes. Two observations of pulse, &c., were taken before current was turned on.)

5/12/06.				C.*	
Hour	3.50	4.5	4.20		4.45
Pulse	72	72	72		72
Blood pressure	103	102	102		103
Temperature—mouth ...	98°	99°	99·1°		99·2°
,, rectum ...	100·2°	99·9°	99·8°		99·8°
,, forearm ...	89°	94·5°	96·5°		97°
,, room ...	68°	69°	70°		71·5°

* Auto-condensation current 500 milliampères for 15 minutes. Age of patient 29 years.

I shall show you presently the effect on the rhythm of the pulse in the case referred to in Table II. 11. In some instances of intermittent pulse—radial only or cardiac as well—the intermissions may diminish or disappear, although as in one case this intermittent pulse had caused anxiety to the patient for many years. Should the intermission have existed for a short period only, as from temporary gastro-intestinal disorder, the intermissions of the pulse may cease after two or three applications of the current; probably from the beneficial effects of the current on the gastro-intestinal canal. A very interesting case of intermittent pulse came under my notice about the beginning of the present researches. The patient was "run down" and she was "nervous." So weak was she and so unstable seemed the cardiac innervation that, although I knew that her object in coming to see me was to get electric treatment, I decided first to put her under bromide of potassium and tincture of nux vomica. At her next visit to me there was no change in the pulse condition, there being still about ten intermissions per minute. Auto-condensation was given for 15 minutes, the pulse-rate fell, and during the following 90 seconds no intermission was detected. The number of intermissions per minute had decreased at her next visit to me four days later, and they again disappeared after 15 minutes of the current. Afterwards the pulse is always noted as regular. A notable condition in this case was that at the early part of the treatment the temperature in the mouth and in the rectum was subnormal, the former being usually under 97° and the latter under 99°. By the end of the treatment the temperature in both the mouth and the rectum became nearly normal.

I think after what I have said regarding the tonic effects of high-frequency currents on the heart I need hardly adduce further evidence of my contention. I have dwelt on this fully because I consider it of the greatest importance, and I think you will agree with me in this. As bearing on this, however, and also on the much-debated question as to the comparative value of the living fingers as against dead, though mechanically more perfect instruments for gauging the condition of the pulse, I may say that the only times I have been impressed with the fact that I was having under my finger a full pulse, as a contrast to what it had been before, was at the close of an auto-condensation and before I knew that my watch and my sphygmomanometer were going to register a lower rate of pulse and a higher blood pressure than before the application of the current. One other point I shall merely mention. Where the pulse is variable before the current application it may become quite regular and steady immediately after. On one occasion the rate varied between 70 and 84 per minute, whereas it was 78 and absolutely steady in its rate immediately after the couch treatment. Some confusion in judging of the influence of the current on

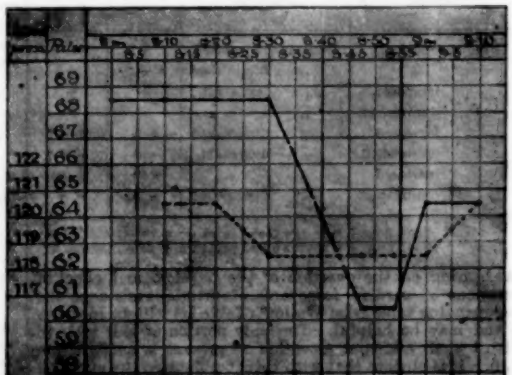
TABLE V.

Hour	5.27	5.38	5.50	5.58	6.4	6.10	6.15	6.23
Pulse	84	84	84	84	84	84	80	80
Blood pressure ...	240	215	185	185	182	185	185	180

Current 400 milliampères from 6.5 till 6.20.

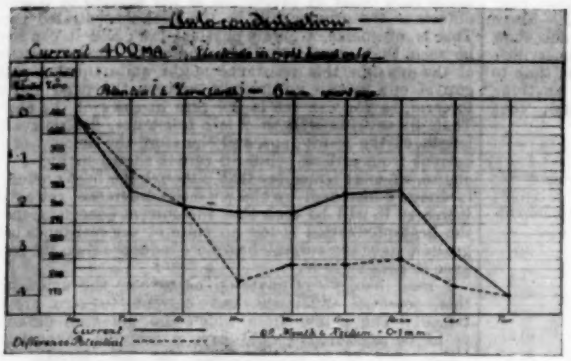
e blood pressure is apt to arise where the effect of immediately preceding exertion or excitement has been to raise the blood pressure and to lower the pulse-rate or raise it before application of the current. In the former case the heart has been quite able to respond to the exertion and so becomes slower. In the latter it has not, but has to beat faster on account of the fatigue. (Fig. 2.) If no change has taken place in the pulse-rate—this having been normal before—a good opinion may be formed of the cardiac force. (See Table V.) This case and cases where the pulse-rate is high, owing to nervous dread of the physician, show the importance of allowing sufficient time for restoration of the cardio-vascular *status quo* before any conclusion can be come to regarding the effect of the current on the blood pressure and on the pulse-rate in any particular case. If a

FIG. 4.



rise of blood pressure and a fall of pulse-rate result from previous exertion a fairly good dose of the current may be given, the final result being probably a lower pulse-rate, with no change in blood pressure. In the case shown in Fig. 4 the tonic effect on the heart is evidenced by a lowering of the pulse-rate without any reduction of the blood pressure.[4] If, however, a rapid pulse be the result of very slight exertion and the blood pressure not have been high, danger may follow even a moderate dose, unless the time be materially shortened (Fig. 2). Should the pulse rise as soon as the current is turned on the patient if asked will probably complain of faintness towards the end of the application, there being a delay of a few minutes in the increase of the cardiac force. The tonic effect on the heart, however, will appear later by the fall in the pulse-rate and the rise in the blood pressure. I may mention here incidentally that in my experience the best results from electric treatment in any form are obtained after all the benefit possible has been derived from drugs and these have failed materially to benefit the patient and when sufficient rest has been taken before each application and for an hour or so after. The best time for a change of air so as to complete the recovery is after the conclusion of the course of electric treatment.

FIG. 5.



Immediate thermic effects.—We are all much indebted to my fellow-townsman, Dr. W. F. Somerville, for his investigations into the problem of surface heat production as a result of high-frequency currents. These are so complete and so firmly established that I need not dwell on them, nor trouble you with my own results more than is necessary to prove what, in my opinion, is the cause of them, and to show that these thermic effects are in no way physiological, but purely physical. For examples of local rises of temperature see Tables VI. and VII. The difficulty of determining the physiological production of heat is stated very clearly by Waller.[5] He says: "By the thermometer we ascertain the temperature of the body, not the amount of heat that it produces or loses. The thermometer gives no measure of the activity of heat production, nor even any positive indication that it is above or below the normal. This must obviously be so when we reflect that the amount of heat in a given body and consequently its temperature, is the resultant of two factors—heat production and dissipation—either or both of which may vary. Theoretically, of course, temperature varies directly with the amount of heat produced and inversely with the amount of heat dissipated, but practically the thermometer does not show whether more or less heat is being produced or dissipated." We are thus left in great part to infer a heat production in the blood by these currents rather than to test it by the thermometer. Here let me state what may not have occurred to some of you, that whilst the rectal temperature is the internal temperature proper, being that of the large splanchnic storehouse of heat, that of the mouth, as pointed out by Haig, is a peripheral temperature. On starting my investigations I allowed too little time for heat distribution consequent on the recumbent position of the patient. In fact, I did not know of it then. When I found, therefore, that at the end of the séance the mouth temperature had risen on an average one degree and the rectal had fallen one degree I came to the conclusion that this was the effect of the current, by relaxation of the peripheral vessels. In one instance—a case of nephritis—exactly the opposite change had resulted, why I cannot tell; but amongst the many I have tested it is the only exception. After some control experiments I discovered that the transfer of heat from the internal to the peripheral circulation was natural and in no sense electro-physiological. A considerable amount of time, I find, is required to bring about this state of heat equilibrium, something like from 30 to 40 minutes. This gives time also for determining to what extent heat reduction is taking place. This latter will depend on previous exercise and the time of the patient's last meal. Physiologists are evidently agreed that the greatly

TABLE VI.

Time.	2.30	2.40	2.50	3	C.*	3.20	3.25
Temperature—							
Mouth	98·5°	—	98·2°	—		98·2°	—
Axilla	98°	—	97·8°	—		99·2°	—
Forearm	—	90°	91·4°	92°		94°	93°
Room	61°	—	64°	—		66°	—

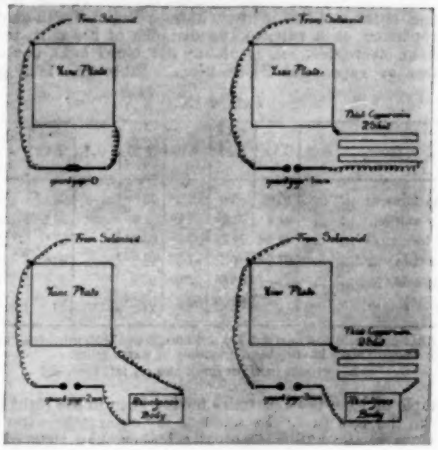
* Auto-condensation current 450 milliampères for 15 minutes.

TABLE VII.

Time.	4.40	4.45	4.50	4.55	C.*	5.20	5.30
Temperature—							
Mouth	—	—	—	93·4°		—	98·4°
Rectum	—	—	—	99·2°		—	98·9°
Right forearm ...	90°	93°	94°	93°		96·5°	—
Left forearm	90°	—	92·5°	—		94°	—

* Auto-condensation current 480 milliampères from 5.5 to 5.20. Electrodes in both hands.

FIG. 6.



This figure shows that all parts of a metallic plate are at the same potential; whereas the difference of potential between the plate and the end of a 25 feet long thick copper wire attached to it is considerable. This is increased should the patient's body intervene also.

[4] See Causes of Variation in the Blood Pressure, "Circulation and Respiration," Lauder Brunton, first series, 1906, p. 273.

[5] Human Physiology, third edition, p. 284.

reduced morning temperature, internal and peripheral, is wholly due to diminished heat production consequent upon long rest. If the blood temperature as ascertained in the mouth and rectum has been diminishing before the current was applied and is found to be stationary during the time of the current, the natural inference is that the current has had some share in this by causing increased heat production. My researches have pointed in this direction, but I have little of definite proof to bring forward in support of it. Waller's statement may explain this. It will be a natural inference also that the heat distribution I have spoken of will account for the rise in the surface temperature throughout as well as in that of the mouth. There is evidence of this contention in the heat tables I now show you, as an explanation of some at least of Dr. Somerville's results. In no case where I have allowed sufficient time to elapse before turning on the current has there been anything like such a rise as he, in some cases, has found. (See Tables VI., VII., and VIII.)

TABLE VIII.

—	Intervals of ten minutes.				C.*	After current.
Foot	78°	79°	79°	78°		78°
Groin	96°	96·8°	97°	97·1°		97·7°
Rectum	99·2°	99·2°	99·1°	98·8°		99°
Forearm	94°	94·8°	94·7°	94·7°		98°
Axilla	98°	98°	98°	98°		98·2°
Mouth	98·8°	98·6°	98·4°	98.3°		98·6°

* Auto-condensation current 500 milliampères for 15 minutes.

During Current.

—	Intervals of five minutes.		
Forearm	96·5°	96·5°	97·5°
Foot	78°	78°	78°

Temperature of room 63°, rising to 70°.
Electrodes in both hands.

It will be noticed that the greatest increase of heat is near the electrodes, and this increase of heat diminishes in amount in proportion, as a rule, to the distance of the parts tested from the electrodes. It is plainly not blood heat, but only surface or superficial tissue heat. Table IX. is a good

TABLE IX.

Time.	6.48	6.58	7.10	7.20	C.*	7.42	Current to zero. m.a.
Right forearm	95°	95°	96·5°	96·8°		98·2°	350
,, axilla...	97·6°	98·2°	98·2°	98·2°		98·6°	325
Left forearm	94·8°	94·8°	96·2°	96·8°		97°	250
,, axilla	97·2°	97·8°	97·8°	97·8°		98°	320
Right calf	—	93·8°	93·5°	94°		95°	275
Left ,, ...	—	92·5°	92·5°	93·6°		94·8°	300

* Auto-condensation current 500 milliampères for 15 minutes. Observations begun after having been one hour in warm room.
Electrodes in right hand and on left foot.

example of this, the electrodes having been in the right hand and on the left foot. In some of my observations the temperature in the axilla is actually higher than that of the mouth. The only time I have ever observed this, apart from the action of the current, was when a patient came to see me one cold night and I found the temperature in the axilla 98°, whilst that of the mouth was 97·7°. This, however, was obviously due to the fact that he was in part a mouth-breather and had left at home his artificial teeth, as these were uncomfortable. As soon, however, as the warm atmosphere of the room had time to tell the mouth temperature became 98·6°. Now, how are these increased surface temperatures caused? I have pointed out that they are greater the nearer the parts tested are to the electrodes, and you will see that this is, by physical laws, just what might be expected, since the current to earth is greatest there and the local heat will be directly proportioned to the square of the current. It must be borne in mind that the quantity of the electricity in the case of the static form is proportioned only to the capacity of the part; whereas in high-frequency applications the current decreases in proportion to the distance of the parts from the electrodes and to the difference of the potential between these and the points from which we are measuring it. (See Fig. 5.)

The heat production is the product of the resistance, as measured by the difference of potential, into the square of the current, and the closer these points of potential difference are to each other in proportion to the amount of potential difference the greater will be the heat concentrated there. This is, of course, a purely physical law; and it can easily be seen that, considering the enormous ohmic resistance of the dry skin, this resistance might quite equal a spark-gap of one to two millimetres between the hand and the forearm, as you can see is the case in some of the charts. That distance, as well as ohmic resistance, determines the length of the spark-gaps, and therefore the amount of the current from various points to zero is shown in Fig. 6. Of course, we must remember that although the heat production is directly increased by the potential difference, yet as this increases it will be seen that the current decreases, and so the heat production is less in spite of the resistance being greater, since the current has more influence than the resistance in causing heat.

I need hardly say anything as to how the amounts of this potential difference and current to zero are obtained. The points from which the potential difference is to be measured should have a metallic connexion to either side of a spinthermeter for the former. The current to zero is measured by making a metallic connexion from any part to earth with a milliampèremeter in series. With both hands on the ordinary electrodes it would be seen that the largest amount of current is, as might be expected, from the hands. The next in amount of current of those measured is from the forearm, and the potential difference between the hand and the forearm is quite considerable, varying from one millimetre to two millimetres, so that nearly the full amount of the current from the hand must act on the wrist and lower forearm. (See Fig. 5.) That the lines of the potential difference and of the current to zero in this chart do not quite run parallel is due, I suspect, in part to the fact that all the potential difference records are taken at one time and then all the current records. This will result in the points of each region from which the readings are taken not being exactly the same. The potential difference and the current may differ in various cases, but though this will in part depend on the ohmic resistance it also depends, at least in the case of the potential difference, on the initial total potential difference—that is, length of spark-gap from hands to earth, the same quantity of current being obtainable from the same apparatus and on the same individual by different arrangements of solenoid and spark-gap, but with a different amount of total initial potential difference to earth. (See Fig. 7.) Query, what, if any, difference therapeutically will there be from the same amount of current but at different voltages? This I have not had time to test.

I have no doubt that some of the rise of temperature in the mouth and in the rectum must be electro-physical, but how much it would be difficult to say. I should expect, however, that this would tell more on the mouth temperature than on that of the rectum, when the electrodes are grasped by both hands. Like Dr. Somerville, I have noticed that the increase of heat on the left forearm is less than that on the right. The cause of this I find is that the resistance is usually greater, and the current to zero less, in the left than in the right forearm. For obvious reasons the reverse would probably be the case in left-handed people.

Penetration of the currents into the deeper tissues.—I have already taken up so much time with the part of my thesis bearing on the cardio-vascular system that I must be brief with the remaining departments outlined in my synopsis. On another occasion I may return to them. It has been generally assumed that high-frequency currents are confined practically, if not wholly, to the surface, and that their physiological effects arise from their action on the peripheral nerves and the peripheral circulation. Dr. H. Lewis Jones, in his admirable text-book on "Medical Electricity," contests the truth of this assumption, basing his argument on the physiological results being such as to require for their explanation

a deeper action of the currents. My researches have quite convinced me that there is abundant evidence of Dr. Jones's contention from the electro-physical standpoint. Before going into this matter, however, let me say that if anyone doubts the fact that these currents traverse the neuro-muscular apparatus, let him, with one hand holding one of the usual couch electrodes, place another electrode held by an insulated handle on the upper portion of the sterno-mastoid muscle and with metallic connexion to the hand electrode, a small spark-gap only intervening, and he will have sensible demonstration of the fact. An objection to this will probably be made that it is the spark which is causing this and not the current from the hand to the neck. Well, let anyone try this experiment without any flow of current by letting go the hand electrode but retaining the spark-gap to the connexion between the couch terminal and the neck, and he will find that so long as he holds the hand electrode so long will there be muscular response, but as soon as he lets go the handle no muscular contraction will occur, although the connexion still exists. Let the gap be so wide, however, that no sparking occurs, then no muscular contraction occurs. The current from the hand to the neck requires to have its potential and the amount of its current disturbed by the varying condition of the outer spark-gap circuit. If an additional argument were required that it was the current from the hand to the neck which was causing the disturbance, it might be found in the fact that as soon as the neck electrode is applied contraction of the muscles of the forearm is set up as well. Another objection which might be raised is that the current causing the muscular contraction is not a pure high-frequency current. If by that is meant that when high-frequency currents are pure they do not cause muscular contraction, I admit this. All the same, however, they are high-frequency currents, the only difference being that at the time they are suffering from a frequent change of potential, through the irregular action of the spark-gap, just as the unidirected current causes muscular contraction only when its potential is changed. In the latter case, however, it is not contended that since there is no muscular contraction during the steady flow of the current there is therefore no current reaching and passing through the muscle. The electro-physical evidence will, I think, appeal to you without much argument from me. A mere statement of some facts, indeed, and an explanation of these by means of Fig. 5, will, I think, satisfy you.

I have referred to the fact that the potential difference varies according to the resistance and in proportion to the distance from the entering current. You see that it may amount to about one millimetre at the forearm, two millimetres at the axilla, three millimetres at the waist, three millimetres at the groin, and four millimetres at the foot. If you examine this chart, however, you will find that the potential difference from the hand to the mouth is practically the same as that from the hand to the rectum; now the potential difference between the neck and the groin is five times as great as that between the mouth and the rectum: that is to say, the resistance and the distance between the mouth and the rectum are not those by the chin, neck, breast, and abdominal walls, but by the gastro-intestinal tract. Again, the potential difference between the axilla and the groin is less than that between the axilla and the waist. Why, indeed, unless the current has gone from the axilla to the groin not simply by way of the body wall but also by the gastro-intestinal canal. I have come to suspect indeed that it takes an even easier road—namely, by the thoracic and abdominal viscera direct, as well as by the gastro-intestinal tract. For if by the latter route only, then, though the ohmic resistance is not great, it is greater than that of a No. 14 copper wire, and the distance is quite as long as 25 feet. Yet we see how large a drop of potential this wire caused. (Fig. 6.) The amount of current to zero at the mouth and at the rectum is almost as if these were different parts of a metallic plate over which the current is flowing easily. Since the current is thus seen to be acting on the whole lining membrane of the alimentary canal there is no wonder that this electric energy has an influence on the appetite and on the general health.

Effects on renal excretion.—My researches in this department have, like those in connexion with the cardio-vascular system, led to a good deal of confusion and uncertainty; and although in the case of the latter I think I have been able to bring some order out of this confusion, I am not quite sure that this has been so in the present department of this work. It will readily be seen that the difficulties are greater. In the laboratory experiments absolute rules as to diet can be, and must be, enforced; whilst in the case of patients such rules are difficult, if not impossible, to enforce, and, if possible, not generally desirable; the tastes

FIG. 7.

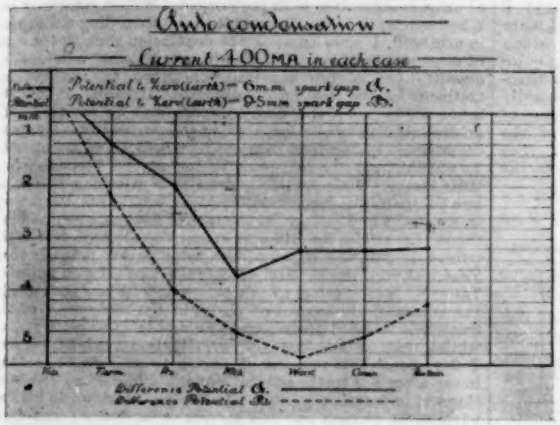
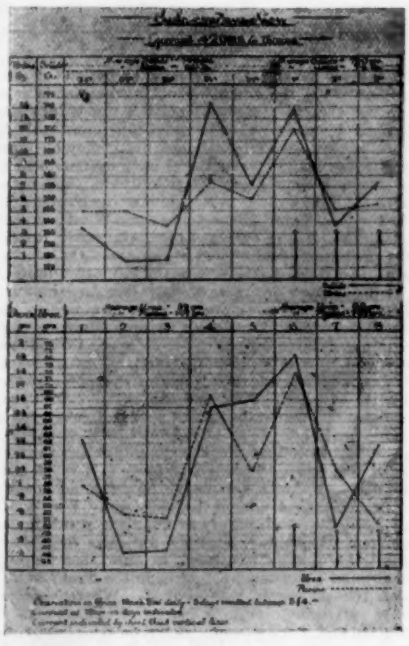

Anode condensation
Current 400 MA in each case
Potential to Xero (earth) = 6m.m. spark gap A.
Potential to Xero (earth) = 9·5m.m. spark gap B.
Difference Potential A.
Difference Potential B.

FIG. 8.



This figure is meant to show the *immediate* effect of the current on the urine. Five preliminary investigations are made on the urinary excretion of four hours, namely, from 10 A.M. till 2 P.M. Thereafter the current is applied daily at 10 A.M. and similar measurements of the urine are made to determine the changes, if any.

and habits of the patients forbid this in the interests of recovery which must be the principal result aimed at. Again this variety in the matter of diet, exercise, &c., brings about such a daily variation in urinary excretions that one day, or even an average of several days, cannot be taken as a criterion; so that the effect of the current may be difficult to detect or measure with any degree of accuracy. It will be obvious, then, that the results of investigations in this department of the subject can only be, in a vague way, of weight. I show you examples which will illustrate these vagaries of the urinary products. (See Figs. 8 and 9 and urine tables.) You will see here that one day more or one day less on either side of the dividing line which indicates the beginning of the electric treatment may quite change an apparently important modification in the one direction into one quite in the opposite. This, however, will hardly account for a steadily maintained change in the direction of the normal for that individual under the influence of the current, where this personal factor can be obtained. (See Table X.) This table shows a steady advance towards the

TABLE X.

In 24 hours.	March, 1906.			C.*	March, 1906.			Average	
	4th	5th	6th		17th	18th	19th	Before	After
Urine (ounces) ...	28·5	26·5	21·5		25·0	34·5	30·0	25·5	29·8
Solids (grains) ...	660	672	589		707	834	660	640	733
Urea ,, ...	192	172	193		235	269	240	156	248
Purins ,, ...	5·97	5·83	5·0		5·8	7·4	6·3	5·6	6·5

* Current daily.
Ratio of purins to urea before = 1 to 33.
,, ,, after = 1 to 38.

In 24 hours.	12/10/06	23/10/06	9/11/06	Average.
Urine (ounces)	45	37	38	40
Solids (grains)	742	651	1003	798
Urea ,, ...	225	222	304	250
Purins ,, ...	7·4	8·1	7·9	7·8

Ratio of purins to urea = 1 to 32.

normal; taking as this the urinary excretion of several months later, when the condition of the patient is noted as "very good," though there still existed the kidney disease as evidenced by a trace of albumin being constantly found in the urine. This is only one case but it may be none the less a valuable one. It is one that I have been able to watch and to gauge the progress of with exceptional care and accuracy. In a case like this where so much benefit has followed the treatment the question arises, What has been the primary action of the current? Dr. Alexander Robertson, formerly professor of medicine, St. Mungo's College, was in charge of the case, and I was acting in conjunction with him. It was one of a very slow convalescence from uræmic convulsions. Coma had lasted for about a week; general blood-letting had been resorted to and for some days it seemed impossible for the patient to recover. Convalescence, as I have said, was very protracted and after ten weeks no appreciable progress was being made, the pulse remaining between 96 and 102. No medicine seemed to have any influence on the pulse-rate. At this stage I suggested high-frequency treatment. I said that I felt sure it would do some good; whether by influencing the general health through the kidneys or the latter through the former I could not tell. It was purely empirical knowledge only I could speak from then. Dr. Robertson agreed to the trial. We decided to stop all medicines and simply to note the condition of the patient from day to day, allowing ten days for this before beginning the electric treatment in order that we might be able to eliminate any source of error in the final result. The effect on the pulse-rate was marked. Whereas during the ten days preceding high-frequency treatment it varied between 96 and 102, it came down to 83 after the third application, practically remaining at 85 thereafter. I have no records in this case of the blood pressure at this stage because this was always taken by means of the Hill and Barnard sphygmomanometer, in which I have explained to you I have no confidence; but later, at about the time this patient's health is noted as "very good" the pulse after rest was found to be 88 and the blood pressure 218 by the Riva-Rocci (Martin) sphygmomanometer at 8 P.M. The blood pressure, therefore, may be taken at the period of convalescence indicated as about 180 to 200, and the cause of the high pulse-rate at that time as the high blood pressure *plus* the cardiac failure, especially the latter.

Into the question of purins in the blood and their effect on the circulation and on the general health this is not the occasion to enter. I have been studying this question for many years and have made a large number of examinations of urine in connexion with the subject. Whilst Haig may be, I believe is, right in many cases in withholding a diet rich in uric acid, I have come to the conclusion that, in the case of most people, if only the diet is suited to the individual *in quantity* and a fair consideration given to the natural instincts in the matter of appetite, attempts should be made to improve the cardiac force and to set right the gastro-intestinal digestion, leaving the purins to take care of themselves, rather than to try to rectify faults of metabolism by washing out the purins or taking special steps to avoid their intake. I should like to draw your attention to one or two points in this connexion, however, which are illustrated in my charts and tables. In the case of nephritis referred to I found that whilst the 24 hours amount of albumin fell as the pulse-rate fell, the curve of the total purins actually rose. True, the urea was probably rising also; but if you examine Table X., which refers to this case, you will see that whilst the average daily amount of purins in the early part of the treatment was 5·6 grains, that excreted later was 6·5 grains, whilst that at the time of greatly improved health was 7·8 grains. The relation of purins to urea again became lower after the treatment and was again higher at the later stage of improved condition. Probably each man has his own purin ratio, as each one has his own urea factor; and until we can ascertain this for the individual in health it is a waste of time to argue as to the effect of the increase or decrease of the purins excreted on the general health. Look now at Table XI. Here in Case (A) we have practically the

TABLE XI.

CASE A.

In 24 hours.	December.			C.*	December.			Average	
	8th–9th	9th–10th	10th–11th		24th	25th	26th	Before	After
Urine (ounces) ...	47	45	51		30	38	42	47·6	36·6
Solids (grains) ...	1189	940	953		792	1045	924	1027	920
Urea ,, ...	470	450	403		345	418	399	443	387
Purins ,, ...	11·7	10·8	11·8		6·7	10	12·3	11·4	9·6

* Current—10 applications 500 milliampères for 15 minutes.
Ratio of purins to urea before = 1 to 38.
,, ,, ,, after = 1 to 40.

CASE B.

In 24 hours.	November			C.*	December.		Average	
	23rd	24th	28th		26th	27th	Before	After
Urine (ounces) ...	34	29	43		47	35	35	41
Solids (grains) ...	785	669	851		982	1001	768	991
Urea ,, ...	—	—	344		446	350	—	398
Purins ,, ...	—	—	12·1		11·9	15·4	—	13·6

* Current—12 applications 450 milliampères for 15 minutes.
Ratio of purins to urea before = 1 to 28.
,, ,, ,, ,, after = 1 to 29.

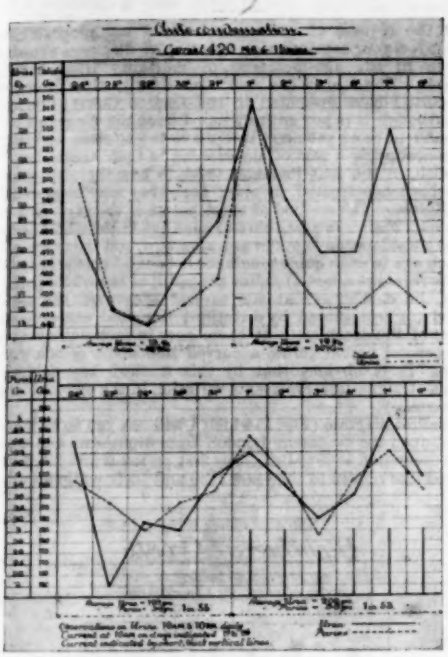
CASE C.

In 24 hours.	November.			C.*	December.			Average	
	13th	20th	22nd		16th	17th	18th	Before	After
Urine (ounces) ...	72	84	72		66	66	60	76	64
Solids (grains) ...	1188	1293	1108		1089	1069	990	1196	1056
Urea ,, ...	432	504	468		—	462	420	468	441
Purins ,, ...	17·7	18	16·7		15·8	16·3	13·9	17·4	15·3

* Current—six applications.
Ratio of purins to urea before = 1 to 27.
,, ,, after = 1 to 28.

same ratio of purins to urea at the close as at the beginning of the treatment; although the treatment immediately improved the general health. The same may be said of the case referred to in Fig. 9, where the ratio is 1 in 55 before and 1 in 53 after treatment; and yet my notes say

FIG. 9.



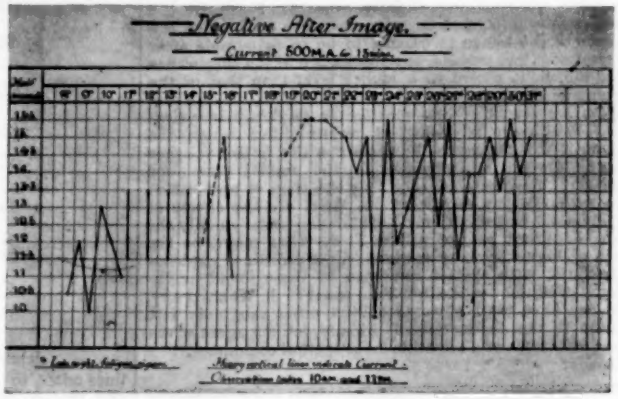
Here measurements are made of the total urine from 10 A.M. till 10 P.M. for five days before and for six days after the beginning of the electric applications, these being daily at 10 A.M.

regarding this case at the close of the treatment: "General condition improved, no rheumatism, no restlessness of legs now." The rheumatic condition must be more than a mere matter of purins. Look again at Cases (B) and (C) in Table XI. and you will find very little change in the purin-urea ratio in either, and yet, in the former at least, the condition improved vastly after the electric treatment. In this Case (B), one of obesity, the urea and the purins have both increased under the treatment. I have pointed out, however, that this is not an invariable result. Indeed, looking at Case (A) you will there see that where a like benefit had followed exactly the opposite had occurred.

I have left myself very little time to speak of the Joulie urinary coefficients. Let me just say that by this is meant the actual amount of phosphates of the urina sanguinis per litre per cent. specific gravity, divided by the total acidity per litre per cent. specific gravity. The normal figure for the phosphates, reckoned as P_2O_5, is 11·17, that of the acidity 4·55, the ratio being thus 2·45. From the variation in these figures Joulie draws important conclusions regarding the metabolic processes and the indications for treatment. Whether electric treatment by high-frequency currents would modify these figures I have not yet settled in my own mind, though I have made numerous experiments in this direction. I may return to this subject on a future occasion.

Retino-cerebral mechanism.—I have considered the physiological effects of high-frequency currents from the points of view of the cardio-vascular, thermo-genetic, gastro-intestinal, and renal systems. Can any of these, or all of them put together, explain the various signs and symptoms we know to expect from this treatment? I am sure they cannot. They give no explanation of certain sensations remarked upon by patients when undergoing auto-condensation treatment. One patient will say that the after-effect is a sense of "comfortable weariness in contrast to fatigue or faintness." Another I have heard remark: "I feel for an hour or two after a restful weariness which is just lovely." One lady, after the vacuum electrode from the high-frequency solenoid had been applied to the supra-orbital region for neuralgia, remarked to me the following day: "I don't know what you have done to me or how you have done it, but since yesterday a load has been lifted from my mind and all my cares are gone." For years this lady seemed to have a weight of care on her and there had I knew been much cause for this. Yet at her subsequent visits and until I last saw her she declared that her burden of mental distress had not returned. Unfortunately, this is an exceptional case; but it will serve as an illustration of the point I wish to enforce—viz., that some action on the central nervous system takes place under the therapeutic use of these currents. How is this effect to be seen or measured? We cannot see what is going on in the brain, but we may see and measure what is going on in the retina, which, after all, is a prolongation of the brain. What is called the "after-image" may by the measurements of its duration give us some indication of the condition of the retino-cerebral mechanism. Physiologists whose works I had consulted declare that the duration of this after-image is proportional to the cerebral fatigue present. Haig maintains that the undue prolongation of the positive after-image is due to a state of colluemia of the capillaries of the retina, and this condition, according to him, is caused by excessive uric acid in the blood, which again is a cause of cerebral malnutrition. I tried to measure the duration of the positive after-image on myself but gave this up for several reasons. The exposure of the eye to a strong light for several seconds was uncomfortable, if not mischievous; besides, it seemed impossible for me to fix a moment of time in the course of its disappearance as a measure of its duration, and further it continually eluded me in my endeavour to keep it stationary. I then decided to measure the duration of the negative after-image as an index of the cerebral fatigue. I soon, however, had reason to doubt

FIG. 10.



whether this, the duration, was directly proportional to the cerebral fatigue, and I began to suspect that it was rather inversely proportional to this, since the fresher I was the longer did the after-image remain. I also noticed that the duration was longer in the morning than at night and longer with the young and the strong than with myself. On satisfying myself as to these points I consulted various other authorities and discovered that the opinions of physiologists were about equally divided on the subject of the after-image

as an indicator of the retino-cerebral condition, some maintaining that its duration was directly proportional to the fatigue, others that it was inversely so.

Let me here explain, for the benefit of those of you who may not have studied this subject, the nature of the negative after-image and the means for accurately measuring its duration.

(*Explanation given and the means of observation shown.*)—My experience has led me to the following conclusions: 1. That the duration of the negative after-image is different in different individuals. 2. That in the same individual it differs according to the state of the health, being longer when the person is well and fresh than when ill and fatigued; according to the time of day, being, at least in my own case, longest just after breakfast and shortest at bedtime. I could, indeed, tell with a fair amount of certainty how fit or unfit I was going to be during the day by taking my negative after-image in the morning, and I could fairly correctly gauge what it was going to be when I had finished my day's work. When, by reason of temporary good spirits giving me the feeling of being particularly fit, I expected to find it high in spite of a specially hard day's work, I discovered that this was not the case, the duration being less owing to the previous fatigue. I can with a metronome beating half seconds reckon the duration in my own case to a quarter of a second. A considerable amount of experience is necessary, however, to be able to measure with sufficient scientific accuracy the duration of one's own after-image. Accordingly I have not been very successful with other people; but I recommend the matter to your consideration as interesting and as of scientific value. The examination must take place as near as possible at the same hour, the light must be the same, the distance of the light from the image the same, and the distance of the eye from the object and the image also the same, as well as must the metronome beat at exactly the same rate and for the same number of half seconds before the eye is turned towards the white paper. The image generally appears at once, but with some people there is a delay of a few half seconds before its appearance. With most the image returns two or three times but this is not reckoned in the measurement. Unless the eye be kept fixed on one spot the record is spoiled. Accordingly I have, as you see, fixed a pin in the centre of each paper to keep the eye fixed on, since if it wanders from the spot it was originally fixed on the image at once disappears. Fig. 10 is a good example of the negative after-image record in a case where the benefit derived from the current was most marked. You will observe that the average for the six times noted before the beginning of the treatment is slightly under 11·5, that for the time succeeding the treatment slightly over 14. Note also the effect of fatigue on one occasion and also that, when the duration of the image is ceasing to be so favourable after the treatment had stopped, one application of the current has raised the night record to a higher level than that of the morning of the same day.

Questions worthy of consideration as to future investigations.—1. Do the physiological results differ where the amount of the current is the same but the initial voltages differ? 2. Can any changes in the retinal vessels be observed? 3. What influence may the time of application have with relation to meals? 4. What are the effects of varying doses and duration of application under exactly the same conditions of the patient? 5. What might be the effect of high-frequency currents on the growth or virulence of bacteria, with special reference to those found in disordered conditions of the intestinal canal? 6. What, if any, influence have these currents on the urina sanguinis with relation to the Joulie ratios? Finally, let me again advise the appointment of a scientific investigation committee.

Glasgow.

WELSH MEDICAL DINNER.—The fourth annual Welsh medical dinner was held in London on May 31st, under the presidency of Sir Isambard Owen. There was a good attendance and amongst those present were Sir R. Douglas Powell (President of the Royal College of Physicians of London) and Mr. Henry Morris (President of the Royal College of Surgeons of England). Sir Isambard Owen, in the course of an interesting speech, alluded to the fact that the University of Wales was securing a supplemental charter to empower it to confer degrees in medicine and surgery.

VARIATIONS IN THE AGE-INCIDENCE OF MORTALITY FROM CERTAIN DISEASES.[1]

BY SIR SHIRLEY F. MURPHY,

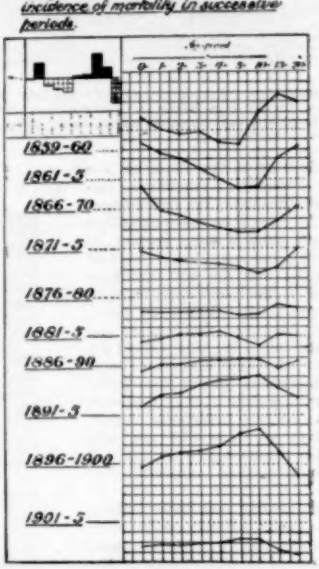
MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

AT the request of your secretaries I am proposing to submit for your consideration a series of diagrams showing change in the age-incidence of mortality from certain diseases. The subject has been from time to time discussed in reports I have presented to the London County Council, but although it is not entirely new I hope the diagrams will be found to be of sufficient interest to the meeting to justify me in occupying a part of the evening in their exhibition.

I wish, in the first instance, to state how these diagrams have been constructed, in order that they may be perfectly intelligible. The method of construction is the same in each instance. The mean death-rate at each age in the whole period under consideration is taken as a standard, and the death-rate at each age in each quinquennial or decennial period is stated as a percentage above or below the mean of the whole period. Thus the death-rates at the several ages over the whole period are represented by a straight line, and the excess or defect of the death-rates at these ages in each quinquennial or decennial period forms a curved line above or below the mean. It is obvious that by this method any deviation from a straight line represents variation in the age-incidence of mortality.

The first diagram (Fig. 1) which I will ask you to look at is based upon the deaths in London from diphtheria and croup from the period 1859 to 1905. The first period represented by a curved line relates to the years 1859 and 1860, while all other

FIG. 1.



lines relate to quinquennial periods. The curves of 1859–60 and 1861–65 closely resemble each other. The line is bent with the convexity downwards, the ages 4, 5 to 10 and 10 to 15 being in the second period the three lowest points in the curve. The period 1859–65 was one of epidemic prevalence. The next three quinquennial periods are periods of decline of prevalence, but it will be seen that this decline has been obtained not so much by decline at the ages I have mentioned as by decline at ages below and above those ages, so that the line representing the period 1876–80

[1] A paper read before the Epidemiological Society on March 5th, 1907.

is almost a straight line. The periods 1881–85 and 1886–90 are periods of increase of prevalence and the increase has been much the same at each age, although it will be noted that in 1881–85 the ages 2, 3, and 4 are a trifle above the mean, and in 1886–90 the ages 1, 2, 3, 4, 5 to 10 and 10 to 15 are also above the mean. There is, indeed, a slight tendency in both these periods for the line to become

FIG. 2.

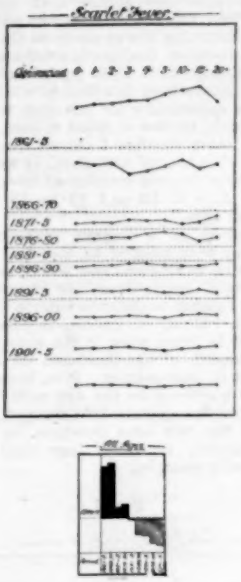
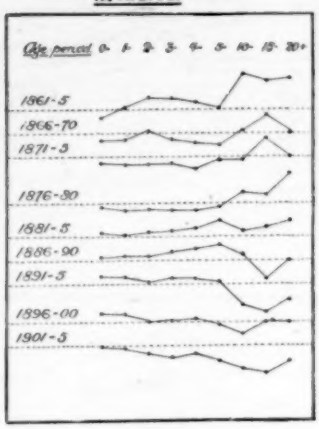


FIG. 3.



curved with the convexity upwards. In 1891–95 the recent epidemic in London was at its height; there was increase at each age, but this increase was most marked at ages 4, 5 to 10 and 10 to 15. In 1896–1900 there was some decline, but the mortality from this disease was still much above the average, especially at the ages 5 to 10 and 10 to 15. In 1901–05 the death-rate at all ages was lower than it has been since the deaths from diphtheria have been separately stated by the Registrar-General, and the line has now become almost straight, with a slight tendency for the decrease to be less manifested at ages 5 to 10 and 10 to 15 than at the other ages.

There has, therefore, been a change in age-incidence

FIG. 4.

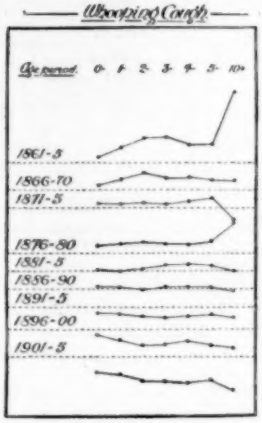
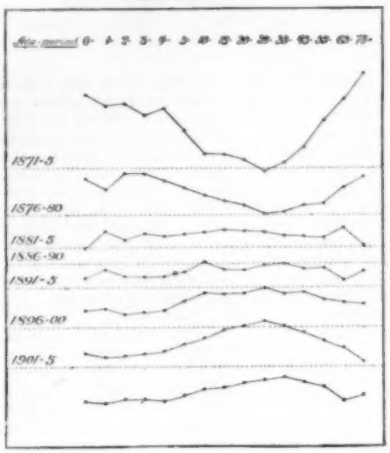


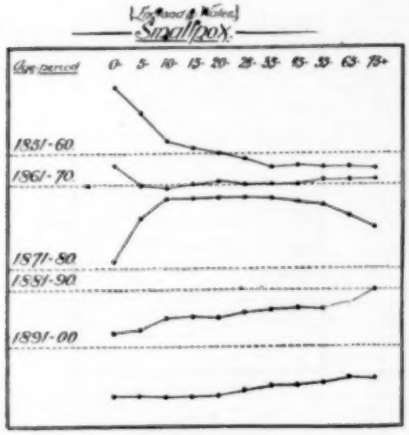
FIG. 5

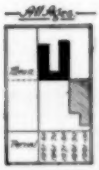


which there is reason for thinking is rhythmical, but the whole story is not yet complete, for we need the periods 1906–10 and 1911–15, or indeed still later periods, to enable us to see whether the lines which they will provide will resemble those of 1866–70 and 1871–75. Possibly, however, there will be less conspicuous curves than in these years,

owing to the greater aggregation of children in school leading to increased incidence of mortality at the school age. It is noteworthy that the increased incidence on ages 4, 5 to 10 and 10 to 15 began when there was decline in the "all ages" death-rate. I think this may probably be a natural increase, although it may have been accentuated by increase in aggregation of children at school. However this may be, I should expect to find the first evidence of recurrence of epidemic prevalence of diphtheria in increase of relative incidence upon the ages 4, 5 to 10 and 10 to 15.

FIG. 6.





The scarlet fever diagram (Fig. 2) is only able to show a story of decline during practically the whole period for which the figures are available. There is, however, a greater tendency for the lines to become straight in the later periods than in the earlier. The line for the period 1861–65 shows greater relative incidence on the ages 4, 5 to 10, 10 to 15, and 15 to 20 than that of any others; and again in 1876–80, when there was some increase in mortality at all ages, this was especially manifest at ages 4, 5 to 10 and 10 to 15. Of course it needs to be remembered that the periods between epidemic prevalences of scarlet fever may be much longer than in the case of diphtheria, and that the time for the minimum incidence on the ages mentioned has not yet come; otherwise a depression of the curve in the last period or two might have been expected; unless, of course, as the result of greater aggregation of children, at ages 4, 5 to 10 and 10 to 15, the depression in the curve at those ages, which might otherwise have occurred, has been obscured. All that can be said is that there is some suggestion in the last two curves of depression at these ages.

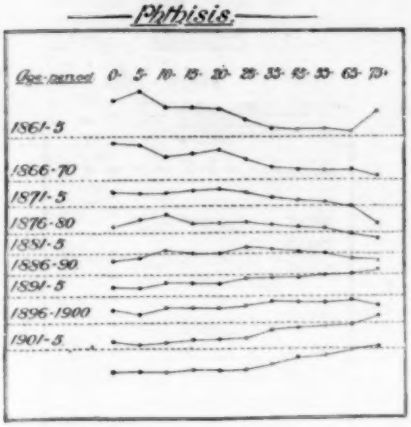
The measles diagram (Fig. 3) tells much the same story. In 1861–65, a period of high mortality, this was exceptionally manifest at ages 2, 3, and 4 (the figures for ages over 10 are comparatively small and no great importance can attach to them). With decline of mortality the line becomes more nearly straight. With increased mortality in 1881–85 and 1886–90 the increase is manifested especially at ages 3, 4, and 5 to 10; and then with decreasing mortality at all ages this special incidence becomes less evident.

The whooping-cough diagram (Fig. 4) closely resembles that of measles. Here, again, the figures for the higher ages are small and apt to yield exceptional results. With slight exceptions there has been decline in the period represented. The curve which is seen in the line of 1861–65 becomes flattened out in subsequent periods. The small increase in mortality at all ages in the period 1876–80 does not appear to have materially affected the curve of those years.

The diagram of enteric fever (Fig. 5) is interesting because, while there has been decline in the death-rate at all ages during the whole period represented, with very slight exception in 1896–1900, there has been increasingly greater relative incidence on the age-period 25 to 35, and on the ages which immediately precede and follow that age-period. The diagram shows that these ages have not participated in the general decline anything like so much as the others. In the period 1901–05, however, the line is straighter than it was in 1896–1900. Although it is quite conceivable that the age-incidence of mortality from this disease would be affected by alteration in the opportunity for infection to reach man by particular channels, in view of what is seen in the diagrams relating to the other diseases I cannot deny the possibility that this change is a natural variation. It will be recollected that the diphtheria diagram manifested increase of incidence on age-periods 4, 5 to 10 and 10 to 15 with decline of mortality at "all ages."

For the purposes of a diagram representing small-pox mortality I have been obliged to abandon London and to use figures relating to England and Wales, so as to avoid the error which would result from the removal of cases of small-pox from London to districts outside where the deaths were registered. It is, of course, impossible from this diagram (Fig. 6) to learn what is the natural behaviour of small-pox in respect of age-incidence on account of the disturbing effect of vaccination. It is, however, interesting to compare the incidence on the age-periods 0 to 5 and 5 to 10 in the two epidemic periods 1851–60 and 1871–80 and to observe that in the two later decennia, in the absence of epidemic prevalence, the lines lose their curvature and become more nearly straight.

FIG. 7.



The diagram for phthisis (Fig. 7) shows, of course, general decline of mortality from this disease and shows also how much more marked this decline is at the younger ages than at the older ages. It gives no indications of that behaviour of the curves which is noticeable especially in the case of diphtheria, but is suggestive of decline of mortality owing to successive additions by birth of a more resistant race.

The cancer diagram (Fig. 8), based on the figures for England and Wales, is in the main interesting as showing behaviour which, I think, can only be explicable on the hypothesis of change in nomenclature. It will be seen that the incidence on ages below 25 years was in the second and third decennia actually and relatively less than in the first, while

on ages above 25 the incidence is increasing. Further, the incidence on ages 25 to 35 is in the second and third periods relatively increasing. In the fourth period the line becomes practically straight, but in the fifth period the incidence on ages 25 to 35 becomes relatively less than on other ages. The actual incidence on ages 25 to 35 has, however, remained practically constant throughout the whole 50 years.

The last of this series is the diagram relating to "all causes" (Fig. 9). It closely resembles the diagram for phthisis, but differs from it in exhibiting a tendency for the

FIG. 8

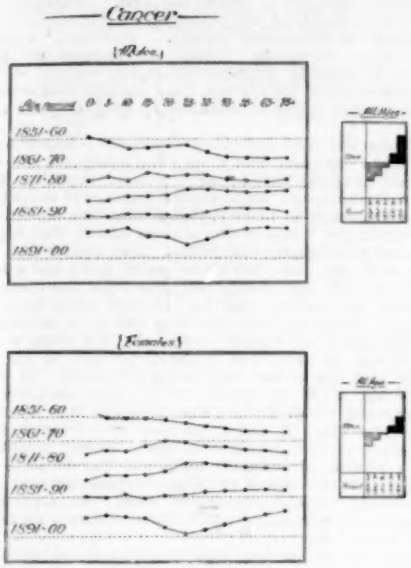
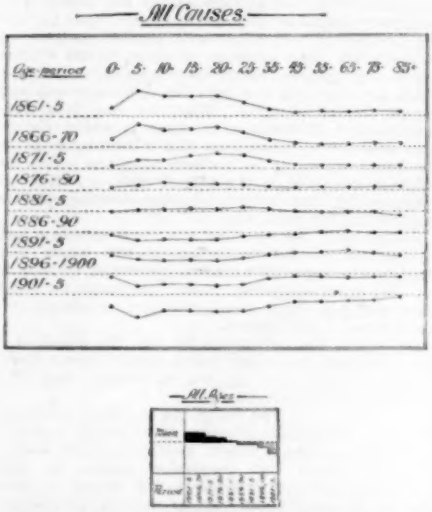


FIG. 9.



mortality of the first year of life to be maintained in greater degree than that of subsequent ages. This is no doubt in some degree due to the mortality from measles and whooping-cough being especially maintained in the first year of life, but is probably largely due to the more complete registration during later periods of deaths of infants who survive their birth but a short time. There is here also the suggestion of the birth in successive periods of a more resistant race.

I have said little concerning the effect which change of nomenclature, better diagnosis, &c., must have had on the diagrams; and indeed only mention it now to protect myself from the suggestion that I have not had it in my mind. I have preferred to present the diagrams based as they are on the actual records of the Registrar-General. I think, however, in the case of the infectious

FIG. 10.

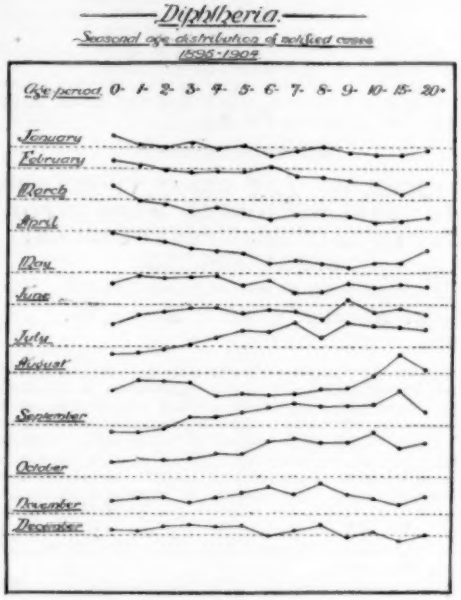
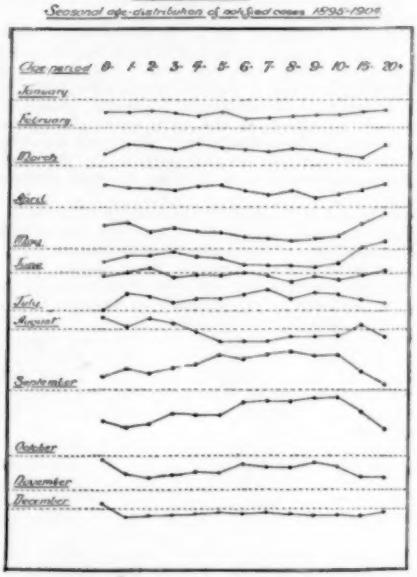


FIG. 11.



maladies, scarlet fever, diphtheria, measles, and whooping-cough, that variations in the age-incidence of mortality occur as a natural phenomenon, not improbably as the result of variation in virulence, and affected also no doubt by such influences as difference in opportunity of acquiring infection, and perhaps in small degree by differences in

the proportion of persons at the several ages rendered immune by attack in antecedent periods. That these variations are not the same as those seen in the other diagrams tends to confirm this view.

Apart from the variations which occur over long periods variations can also be shown to occur as the result of season. The last two diagrams I have to exhibit show this in respect of diphtheria and scarlet fever. It will be seen that in the case of diphtheria (Fig. 10) the incidence of attack on the ages 5, 6, 7, and 8 increasingly declines until April, after which it increases until August, when the increase is interrupted by the school holiday. It is again manifest in September and October, and then again declines.

The diagram relating to scarlet fever (Fig. 11) shows practically the same behaviour, except that the decline at the ages mentioned is continued to May.

LIGATURE OF THE RENAL VESSELS BY THE TRANSPERITONEAL METHOD FOR THE CURE OF PERSISTENT URINARY RENAL FISTULA,

WITH NOTES OF ONE SUCCESSFUL CASE,[1]

BY MAURICE P. HOLT, M.R.C.S. ENG.,
MAJOR, R.A.M.C.

1. *Choice of procedure:* (*a*) *nephrectomy.*—In the absence of well-known contra-indications nephrectomy is commonly acknowledged to be a legitimate surgical procedure in certain of these cases. But where there is extensive matting of the kidney and perinephritic tissues to surrounding structures nephrectomy may be extremely difficult or even impossible. The severity of the operation, the risk to the patient from hæmorrhage, shock, and damage to important organs and serous cavities, justify the authoritative admission that the maintenance of good drainage is then the sole resource in the vague hope that at some future and quite uncertain date healing may occur.

(*b*) *Subcapsular nephrectomy;* (*c*) *morcellement.*—In other cases subcapsular nephrectomy, piecemeal nephrectomy or morcellement may be tried, but these operations are often followed by prolonged suppuration or by permanent fistula owing to a portion of renal tissue having been left behind, as it frequently is.

2. *Disabilities attendant on a persistent renal sinus.*—Taking the case of a young and otherwise robust man who has to earn his living, and who would find the expenses entailed by the purchase of voluminous and frequently to be changed dressings, or of any special apparatus, quite beyond his resources, or taking, on the other hand, the case of a weakly patient, in whom the drain of prolonged suppuration would appreciably curtail life, the surgeon may well hesitate before coming to a decision as to which of these methods to adopt.

3. *Dangers and difficulties of nephrectomy.*—In not a few cases death from hæmorrhage alone has been the immediate result of operation. Greig Smith recognised cases where the kidney and surroundings were so much altered that the kidney "could not have been removed from the body by any proceeding claiming to be regarded as surgical." Henry Morris admits cases "in which it was difficult even to dissect the organ away in the post-mortem room," in which it is difficult or impossible to identify where kidney tissue begins and scar tissue ends (if, indeed, they are not inseparably blended), and in which, further, the closure of a urinary sinus is "sometimes impossible"; and other similar opinions could be quoted.

4. *Nature of case for which renal vessel ligation was performed.*—It was upon a case of this nature that the operation which I devised was successfully performed. The patient was a short, thick-set, strong young man, otherwise healthy. Nine months before he came under my care he sustained a rupture of the left kidney, and his very short subcostal space was filled with scar tissue, and a sinus through which pus and urine were freely discharged. I made four attempts to perform nephrectomy but had to abandon the operations partly on account of furious hæmorrhage, partly on account of the impossibility of distinguishing renal from surrounding scar tissue. (Notes of the case are given below.)

5. *No precedent to go upon.*—I have not been able to find any reference to ligature of the renal vessels as an operation to secure a definite surgical result *per se*.

6. *Experimental ligation of renal vessels.*—In various physiological publications and text-books references are made to atrophy of renal epithelium and cessation of urinary secretion as a result of ligature either of the renal arteries or veins. Beddard's experiments on the frog,[2] even allowing for differences between batrachian and mammalian renal blood-supply, lend support to the view that by ligature of the renal vessels the glomeruli of the whole kidney are cut out of the circulation, that complete ligature prevents spontaneous secretion of urine, and that "cutting off the arterial blood-supply of the kidney causes the epithelium of the tubules to degenerate rapidly." De Souza[3] supports Heidenhain's contention "that the amount of urine secreted is directly proportional to the velocity of the blood-flow through the kidneys," and suggests that probably a similar result might be obtained by tying only the renal veins.

7. *Deductions from laboratory experience.*—Reasoning on these lines I concluded that if the renal artery and vein were ligatured complete atrophy of the renal secreting tissue would be insured, and supposing the presence of urine to be the sole hindrance to healing, that if once the secretion of urine within the limits of the abscess ceased, then healing by normal granulation would follow. And this, indeed, was found to be the case; the sinus healed, and I had a letter only a few weeks ago, nearly two years after the operation, in which the patient said he remained quite well, was earning a living, and that the sinus had never reopened.

8. *Significance of blocked ureter.*—In the notes of the case it will be seen that evidence pointed to the conclusion that the ureter had become blocked. It seems obvious that when this is so a renal fistula can never heal spontaneously; it would be quite fortuitous that a blocked ureter (excluding, of course, the case of a removeable, or moveable, calculus) should ever again become patent. It is very seldom advisable to undertake any surgical proceeding with the object of re-establishing patency of a blocked ureter in old suppuration cases; for a successful result, even if achieved, is not likely to remain a permanent one.

9 *The presence of, and final cessation of, urine in the discharge from the sinus.*—At this point I may say that it remains a matter for regret that I did not have some estimate made from time to time during the healing period of the urinary constituents in the discharge from the sinus, for the purpose of comparison with similar analyses made before operation. The presence of urine in the discharge was only too obvious before the operation. After the operation for the first few days the discharge was scanty and smelt faintly of urine. Then, on the fifth day, a large amount of discharge came away in which the smell of urine was not apparent; nor was it ever again present, the discharge appearing as a clear, odourless serous fluid. Healing was complete on the fifty-seventh day after operation. Apparently, then, atrophy of urine-secreting epithelium occurred within five days or so.

10. *Pathology of the cessation.*—It must remain a matter for speculation whether infarction of the whole kidney occurred or whether a more gradual process of atrophy took place. The urine appearing in the discharge for the first few days may well have been a residuum remaining in the various recesses of the abscess.

Having stated the indications for, and the object of, the procedure adopted, one or two points remain to be considered as to (1) the technique, (2) the advantages, and (3) the limitations of the operation.

11. *Technique.*—(*a*) The technique is rather obvious, but remembering the possible existence of accessory or abnormal renal afferent vessels, a search should be made along the aorta to a limited but reasonable extent for these; Zondek found accessory arteries in five out of 15 subjects examined. (*b*) Asepsis can only be assured by avoiding the suppurating area at all costs; this is effected by keeping as far from the kidney as possible and as close to the aorta and vena cava as is safe to apply a ligature. (*c*) Access to the renal pedicle in abdominal nephrectomy is claimed to be safer when made through the outer layer of the meso-colon by reason of less danger to the colic blood-supply; to follow this route, however, would almost certainly open up the

[1] A paper read before the Royal Medical and Chirurgical Society on May 28th, 1907.

[2] Journal of Physiology, vol. xxviii., 1902.
[3] Ibid., vol. xxvi., 1900-1901.

septic area, and moreover the colon may be found inseparably united to the kidney. In my case no evil resulted from approaching the renal vessels through the inner mesocolic layer, and this notwithstanding that a search was made for possible renal afferent vessels.

12. *Advantages.*—Properly carried out there is little or no risk from hæmorrhage, shock, or sepsis. As regards (*a*) *hæmorrhage*, this method is in great contrast to any form of piecemeal nephrectomy; (*b*) it is an *aseptic* operation which nephrectomy would certainly not be; and (*c*) subcapsular or piecemeal nephrectomy is at best *a very severe operation;* ligature is not so and shock should not occur; there is inappreciable risk as regards possible damage to the colon or other surrounding organs and serous cavities (septic infection).

13. *Limitations.*—Ligature of the renal vessels may be a very simple proceeding or may be insuperably difficult, and of course there may occur cases where the kidney is so closely adherent to the aorta or the vena cava as to make it impossible to apply a ligature to the vessels. Greig Smith mentions a case where "the aorta and vena cava were so adherent to the kidney that it was found impossible at the autopsy to dissect them apart." I take it that such a condition would be easily recognised through a sufficiently free opening in time to save a blunder. But in the case of the right kidney it might still be possible to ligature the artery by getting at it behind and to the left side of the vena cava, pushing the vessel aside for the purpose of access. Ligature of the artery alone would suffice on laboratory experience to bring about atrophy of the renal epithelium. In the case of the left kidney the renal vein would be accessible and ligature of this alone should bring about a similar result. Von Bergmann mentions a case of Schede's in which an elastic ligature necessarily included a part of the vena cava. The right renal vein is so short (about one inch long) that there would always be danger of opening the septic area in trying to isolate it for purposes of ligature.

Consultations and advice.—An unusual procedure of this sort was naturally not undertaken without first asking the advice of others whose experience would be of great value. First, on several occasions Sir Charles B. Ball very kindly saw the case with me. He quite acquiesced in the view that a further attempt at nephrectomy would not be justifiable, and when at a later date I suggested ligation of the renal vessels he agreed that, though there was no precedent to go upon, it would be worth trying. Finally, I showed the case to him when the sinus had quite healed. To Professor W. H. Thompson, of Trinity College, Dublin, I put the question of the probable result in man of ligature of the renal vessels, and he argued that, from laboratory experience, immediate cessation of urine secretion might be anticipated and then, at an early date, atrophy of the kidney should follow. I had the great advantage of the valuable assistance and wide experience of Dr. W. S. Haughton, surgeon to Steevens's Hospital, Dublin, at two of the attempted nephrectomies, and on each occasion he agreed that the profuse hæmorrhage justified abandonment of the operation. At the final operation (ligature of the renal vessels) I was fortunate in securing the assistance of Dr. R. Atkinson Stoney, senior demonstrator of anatomy, Trinity College, Dublin, and surgeon to the City of Dublin Hospital. My gratitude to these gentlemen is not easily expressed in words.

Conclusion.—In conclusion, though in the first instance this operation was performed when nephrectomy had been attempted and found impossible, I should not hesitate to employ renal vessel ligation in the future as a substitute for nephrectomy where this latter operation promised great difficulty and the likelihood of such severe hæmorrhage as would suffice to turn the scale between life and death in an exhausted patient. Moreover, as a preliminary to a subsequent nephrectomy (a septic operation) an aseptic ligation of the renal vessels would be sound surgery, though I claim that nephrectomy would then be unnecessary, as the ligature would be followed by rapid and permanent cure. Ligature of the renal vessels is surely a great improvement on any form of subcapsular piecemeal nephrectomy or morcellement. The former is a simple, and the latter a very serious, procedure, and both effect the same result.

While quite conscious of the imperfect support that a single successful case affords to a new method, the very rapid, satisfactory, and permanent cure so obtained seems to warrant my bringing the subject before the notice of the Fellows of the society with some confidence that it may be deemed worthy of criticism at least, and possibly of some degree of approval as to its suitability in cases of a similar nature.

Brief history of case.—The patient was aged 19 years. Sept. 14th, 1902: Admitted. Kicked at football previous day. Severe pain in loin. Oct. 2nd: Large abscess opened close to left iliac crest; let out pus and urine. Diagnosis: Rupture of ? kidney or ureter.

Jan. 21st, 1903: Extensive empyema evacuated; previous abscess still discharging pus and urine. April 4th: Abscess explored. It extended forward amongst abdominal muscles to near umbilicus, upwards to left pleural cavity, backwards and upwards to left kidney area, downwards into pelvis. Pus in vesical urine. Diagnosed ruptured kidney. June 8th: Sent to Dublin for nephrectomy. 21st: Pyuria; pus and urine discharging from sinus in loin. July 17th: *Operation.*—Attempted nephrectomy; abandoned owing to profuse hæmorrhage; removed five calculi. August 6th: Scar in eighth intercostal space opened spontaneously. Nov. 10th: Skiagraph; shadow of calculus in kidney. 12th: Empyema scar again opened spontaneously, having remained closed six weeks. Dec. 1st: *Operation.*—Attempted nephrectomy; abandoned owing to inadvertently opening peritoneum and inability to define limits of kidney tissue; three calculi removed; very profuse hæmorrhage.

March 6th, 1904: Skiagraphed; further shadow of calculus. 15th: *Operation.*—Two calculi removed; profuse hæmorrhage, therefore gave up attempt at piecemeal nephrectomy; unable to clamp pedicle; collapsed and critical condition for many hours. Sept. 26th: Cathelin's separator: Right ureter, urine acid, clear, no pus or blood, no albumin. Left ureter, urine neutral, opaque, "smoky," pus and blood cells. Nov. 17th: No pus in urine; free discharge of pus and urine from sinus. *Operation.*—Attempted nephrectomy; began by peeling peritoneum from scar tissue; opened peritoneum inadvertently, at once closed; further separation impossible; removed large calculus from ? pelvis of kidney, having a rounded process of shape and size of ureter, one-third of an inch long; kidney tissue and scar quite inseparable; very severe hæmorrhage. Saline transfusion adopted. 18th: Sudden profuse hæmorrhage threatening life; condition very critical for some hours; hæmorrhage controlled by gauze packing.

Jan. 29th, 1905: Urine (vesical), clear, neutral, no trace of albumin; no pus or blood cells. May 2nd: Urine clear, normal; no shadow of calculus visible; abundant urine and pus from sinus. Cathelin's separator: Right ureter, urine clear, normal; none collected from lef, ureter. June 13th: *Operation* —Laparotomy by Lennander's incision. Some difficulty in finding renal vein owing to enlarged lymph glandst vein ligated, then renal artery tied and divided. No accessory afferent vessels found. August 9th: Sinus in loin completely closed. 15th: Discharged quite well.

1907.—Letter to say patient remains quite well. Sinus has never reopened or given any trouble. Until the last operation it had been necessary to apply every day four or more very voluminous dressings; even these were often quite insufficient to take up all the urine and pus, his bed and clothes occasionally becoming soiled. There was not the least tendency to heal, nor did the amount of discharge and urine ever tend to lessen until after the final operation.

TWO CASES OF INFECTION BY THE PARATYPHOID B BACILLUS.

BY EDWARD A. GATES, M.D. LOND., M.R.C.P. LOND.

CASE 1. *Continued fever; four relapses; venous thrombosis; acute bronchitis; cholecystitis; lentigines; agglutination reaction with paratyphoid B bacillus.*—The patient was a woman, aged 54 years. After a week's malaise she took to her bed on Nov. 26th, 1906, and remained there until March 19th, 1907. The initial symptoms were intense headache, slight epistaxis, vomiting, and fever. There were a few roseolous spots on the chest and abdomen; the tongue was furred; the spleen was enlarged, descending two fingers' breadth below the costal margin, and the liver one finger's breadth. The right kidney was freely palpable. Constipation was present. The urine gave a well-marked diazo reaction and contained a trace of albumin with, microscopically, many white cells. On Dec. 3rd the blood serum was sent to the laboratory of the hospital of Santa Maria Nuova to be tested for the reaction with the typhoid bacillus. The report was returned that the reaction was positive. The other features of the case being so strongly in favour of this diagnosis the exact details of the reaction were not demanded until a much later date, when it was found that the test had only been made with a dilution of 1 in 40, and that it was at the end of three hours that agglutination was observed to have taken place both macroscopically and microscopically. The temperature gradually mounted, reaching its maximum (104·4° F.) on Dec. 5th, the pulse-rate varying between 88 and 104. After this the temperature declined gradually with daily oscillations of about 2°, the maximum on Dec. 20th being 100·6°. After this it gradually rose again and reached 103·2° on Jan. 8th, 1907, and continued irregularly raised until the 30th, when the patient had a severe rigor. Immediately after this for two or three days rhonchi were heard all over both lungs.

Up to this time, though the fever continued, the patient appeared to be making satisfactory progress, except for the fact that on Jan. 24th she had had pain in the left groin and inner side of the left thigh, with tenderness over the left femoral vein. This, however, subsided in a couple of days and was not accompanied by any œdema. There was now no headache, the mind was quite clear, the patient was cheerful, the bowels acted well to daily enemata, the urine was normal except for a fine trace of albumin, and food was well taken, consisting of one and a half litres of milk and two eggs daily. During the first fortnight of February the temperature oscillated between 98° and 100° but on the 14th it began again to ascend, reaching 103·6°, with a slight shivering attack on the 20th. The general condition remained excellent. There was no new symptom to account for the rise of temperature. On the 26th a few fresh rose spots appeared on the abdomen. During February the patient and her nurses observed that she had become extensively freckled on the face, trunk, and limbs, the spots on the last being stains as large as a shilling-piece. The patient declared that she had never before in her life had any freckling of the skin.

On Feb. 27th blood serum was taken and sent to the pathological laboratory of the University of Florence for examination of its reaction on typhoid and paratyphoid bacilli. The examinations were made by Dr. Menini, assistant to Professor Lustig, under Professor Lustig's personal supervision. The report was returned: "Agglutination test executed March 2nd, 1907, with the blood serum of Mrs. ——. In the dilution of 1 in 100 at the temperature of the room: Negative for the bacillus of typhoid (origin of culture, Berlin). Negative for the paratyphoid bacillus A (laboratory culture). Positive (in about half an hour) for the paratyphoid bacillus B (laboratory culture)."

From Feb. 25th the temperature had been slowly falling, and on March 2nd and 3rd had not risen above 99°. On March 3rd the patient began to have pain round the upper part of the abdomen. This pain was very severe during the night. On the following day the temperature rose with a slight shivering attack to 101·8°. There was great tenderness in the right hypochondrium but the outline of the gall-bladder could be mapped out, its lower edge reaching to the level of the umbilicus. There were no jaundice and no bile in the urine. The temperature was normal on the 5th and remained so for ten days. The tenderness soon subsided, but the enlargement of the gall-bladder had not wholly disappeared even on the departure of the patient from Florence in the middle of May. On March 13th fish was allowed and on the 15th minced chicken. On the 16th the temperature began to rise slightly but never above 100° and on the 28th it was normal morning and evening. On the 29th the patient was up for an hour, having been continuously in bed until this date from the 26th of the preceding November. At the beginning of April the temperature was again irregularly, though but slightly, raised, reaching 100·2° on the 8th and 9th, and did not become regularly normal until the 19th. On the 8th and 9th there was some return of the tenderness over the gall-bladder and the patient was kept in bed for three days. After she began to walk the left leg and thigh swelled to some extent, with pitting over the tibia. The swelling was not great and had already become less when the patient left Florence in the middle of May.

CASE 2. *Catarrhal jaundice; slight fever; agglutination reaction with paratyphoid B bacillus.*—The patient, aged 21 years, who was the daughter of Case 1 and lived in the same apartment, was taken ill with a "bilious attack" on Dec. 7th, 1906, and developed jaundice with symptoms of obstruction of the outflow of bile. There was slight elevation of temperature, but never above 100° F. The symptoms rapidly subsided except the slight rise of temperature, which persisted for a week and probably longer, as the patient, feeling quite well, was allowed up and the temperature was no longer taken. During the rest of the winter and spring she was in the best of health. After the blood serum of the mother (Case 1) had given such a decided reaction with the paratyphoid bacillus that of the daughter was also sent for examination at the pathological laboratory of the University and submitted by Dr. Menini to the same tests on March 6th with identical results—that is, the reaction was negative with typhoid and paratyphoid A bacilli, but positive in a dilution of 1 in 100 in half an hour with paratyphoid B bacilli.

Florence.

A CASE OF RECURRENT PNEUMOTHORAX.

BY JOHN CARUTHERS SALE, M.R.C.S. ENG., L.R.C.P. LOND.

ON June 3rd, 1906, I was called to see the patient, a well-developed woman, aged 21 years, by occupation a draper's assistant, who complained of pain in the right side of the chest and shortness of breath. The history of her illness was as follows. In July, 1901, she had a cough and began to spit up a little blood. She had never previously had a cough except when suffering from an ordinary catarrh. She had whooping-cough in childhood but had never had pleurisy or pneumonia. There was no history of tubercle in the family but her mother suffers from well-marked acromegaly. In August, 1901, about three weeks after she commenced to spit blood, whilst brushing her hair in the morning, she suddenly felt a sharp pain in the right side, which was worse on lifting the right arm. She also had a cough, was short of breath, and could not lie on her right side. When the pain came on the spitting of blood ceased. She was seen by a medical man who diagnosed pneumothorax. She was in bed for a month and resumed work at the shop in three months, feeling quite well. She was told at the time that she had not got consumption. In April, 1902, she had a similar attack which was not so severe. She stayed at home for a week but did not go to bed and did not consult a medical man. In August, 1902, she was again taken with shortness of breath and a dry cough but on this occasion had no pain. In each of the years 1903 and 1904 she had two attacks. On three out of the four attacks she was seen by a medical man who told her that she had pneumothorax but that he could discover no signs of consumption. In February, 1905, whilst staying at a distance she had another attack and was in bed for three weeks. The medical man who attended her there told her that it was another attack of pneumothorax and that her lungs were not diseased.

In April, 1906, she had a further attack but not a severe one. It came on just as she came downstairs. She remained at home for a week but did not consult anyone. From then she remained in good health until the day on which I saw her. On the night of June 2nd, 1906, she went to bed at 12 o'clock. At 1 A.M. she awoke with pain in the right side and shortness of breath. When I saw her at 6 A.M. her condition was as follows. She was lying on her back; her face was rather flushed; her respirations were 32 per minute; her temperature was 99° F. and her pulse-rate was 108. She had a slight dry cough. The right side of the chest moved badly but was not immobile. Vocal vibrations were absent over the whole of the right chest. There was hyper-resonance all over the right side of the chest; there was no dulness at the base. On auscultation amphoric breathing was heard over the whole of the right chest; the vocal resonance was faint; there was no metallic tinkling; the "bell sound" could be obtained. The heart was not displaced. She remained in bed for three weeks, at the end of which time all the symptoms had subsided. The cough disappeared in a week and at no time was there any expectoration. In two months the patient returned to her employment and at that time on examination her chest appeared to be quite natural. The percussion note and respiratory murmur were equal on both sides, the chest expanded well, and there were no added sounds. Up to the present time—April, 1907—she has remained in good health and runs up and down stairs without any discomfort. She has had no further cough and her lungs, on examination, appear to be quite healthy.

According to the patient's account she has had ten attacks of pneumothorax. I think her account can be relied upon, for, so far as I have been able to ascertain, she can invariably diagnose her own condition with certainty. She knows the onset accurately. There is little shortness of breath as a rule, but there are usually some pain and a dry irritating cough which soon passes off. Between the attacks she has no cough or sputum and she has never had any hæmoptysis since the first attack of pneumothorax. In each attack, so far as I can ascertain, there has been a complete pneumothorax with no sign of fluid at any time during the progress of the case, yet sometimes she is very little affected, at others much distressed. Possibly the size of the opening may account for this variation, a small opening causing a

more gradual and therefore less distressing development of symptoms.

Most of the reported cases of recurrent pneumothorax in an apparently healthy person have eventually turned out to be tuberculous in origin. The hæmoptysis immediately preceding the initial attack seems to point to that theory in this case, but though it is now nearly six years since the first attack no signs of pulmonary tuberculosis have developed and the patient is becoming stouter and more robust. The largest number of attacks of pneumothorax in one person that I have been able to find is four in a case reported by Dr. D H. Gabb in the *British Medical Journal* of July 28th, 1888, and reprinted by Dr. Byrom Bramwell in vol. iv. of "Clinical Studies." In this case there was no sign of pulmonary tuberculosis.

Since the above was written this patient has had another attack of pneumothorax, making 11 in all. The attack came on as she was walking in the street and was not attended by much distress. She insisted on going back to business in three weeks from the onset before the air was entirely absorbed and is apparently none the worse for so doing.

Skegness.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

DISLOCATION OF THE CLAVICLE DUE TO PROMINENT CERVICAL RIB.

BY F. D. BENNETT, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case may be of interest as I am unable to find a similar one recorded.

A boy, aged 14 years, of normal physique came before me for examination and presented the following condition. On the left side was a prominent cervical rib projecting to, and touching, the clavicle about the centre. At first sight it presented the appearance of an old fracture of the clavicle with considerable callus around. During the passage of the clavicle over the end of the rib in elevation or lowering of the shoulder the sternal end of the clavicle to admit of its passage over the rib was dislocated forwards and returned to its normal position immediately the bone had passed above or below the rib. Owing to the difficulty of photographing the part some x ray photographs do not show the condition as I should have wished. The lad suffered no inconvenience and was unaware of any abnormal condition.

Weymouth-street, W.

A CASE OF OLD-STANDING DIAPHRAGMATIC HERNIA DISCOVERED POST MORTEM.

BY PENROSE WILLIAMS, M.R.C.S. ENG., L.R.C.P. LOND.

A MAN, aged 77 years, was admitted to the Bridgwater Hospital under my care for hæmatemesis with a history of difficulty in swallowing and wasting of several months' duration; he died rather suddenly within 40 hours.

At the necropsy the left side of the chest from the diaphragm to two inches above the horizontal nipple line was found to be occupied by an oval cystic swelling which proved to be the stomach. Behind it was a coil of intestine consisting of the whole of the transverse colon, part of the ascending colon, and the great omentum. The heart was displaced to the right, being entirely on that side of the middle line, and completely covered by portions of the right and left lungs. The right lung occupied a normal position but the left lung was pushed upwards and to the right and was shaped to accommodate the stomach. In the diaphragm to the left of the middle line and posteriorly was a horse-shoe shaped opening, having its convexity forwards and bounded posteriorly by the chest-wall; the margin was smooth, rounded, and thickened, and terminated behind in two "crura," one overlapping the other; the opening admitted four fingers on the flat, or the whole hand cone-shaped. The omentum was firmly adherent to the margin of the opening, the upper surface of the diaphragm, the chest-wall, and the left lung, and the fundus of the stomach was adherent to the left lung. The œsophagus apparently passed through the diaphragm in its usual position, the stomach thence passing abruptly back again into the chest through the accessory opening; the pylorus lay just below this opening; the other abdominal contents were normal except that the transverse colon passed in a straight line from the cæcum to the diaphragmatic opening, and the descending colon, which was empty and contracted to the size of a man's forefinger, passed in a straight line to the sigmoid flexure.

The dense adhesions, the character of the opening, and the shape of the left lung, which was not merely displaced by pressure but had apparently grown into a hollow shell-like covering for the stomach, suggest that the hernia was not recent and not traumatic, and this, together with the unusual extent of the displacement, seems worth recording.

Bridgwater.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Lantern Demonstrations.—Colour Vision.—Syphilitic Affections of the Eye.—Rupture of the Pectinate Ligament.—After-Cataract.—Perinaud's Conjunctivitis.—Telangiectasis of Retinal Vessels.—Exhibition of Specimens.

A MEETING of this society was held on May 25th, Mr. J. PRIESTLEY SMITH, the President, being in the chair.

Mr. GEORGE COATS gave a lantern demonstration on the Pathology of Rupture of Descemet's Membrane. This was first discovered microscopically by Becker in 1875. Mr. Coats had found these ruptures in 12 of 13 cases of buphthalmos, and in two of eight cases of glioma with increased tension. They were absent in four cases of high myopia. The ruptured ends were sometimes found to be flat, and sometimes curled up, but the rupture itself was almost always covered with endothelium. At times extensive detachment of the membrane was found. Experimentally he found that the globe would give way before the membrane would rupture, but if the membrane was first scratched many features of the rupture could be reproduced.

Dr. F. W. EDRIDGE-GREEN gave an account of his observations with Lord Rayleigh's Colour-mixing Apparatus and showed a table which brought out the fact that there were extraordinary differences in the way in which people were able to match the colours. This was not due to any physical condition present but could be readily explained physiologically in accordance with his (Dr. Edridge-Green's) theory of colour vision.

Dr. ALEXANDER BRUCE gave a lucid lantern demonstration of the Third Nerve Nucleus and its surrounding parts.

Mr. SYDNEY STEPHENSON described the present position of the Spirochæta Pallida in Relation to Syphilitic Affections of the Eye. After briefly reviewing the evidence in favour of the spirochæta pallida being the specific element of syphilis he described the special researches which had been made on the eyes of man and the lower animals. In congenital syphilis the organism had been found by Stock, Peters, Römer, Bab, and himself. He detailed the experiments of other observers who had produced interstitial keratitis in the eyes of monkeys and rabbits with syphilitic material from man and had found spirochætæ in the lesions thereby produced. As regards clinical syphilis of the eye, the organism had been found by himself and other observers, and he expressed his belief that the presence of Schaudinn's organism was the strongest possible proof of the syphilitic nature of any given disease of the eye or of any of its appendages.

Dr. LESLIE BUCHANAN showed a series of lantern slides of Preparations of Eyes of Invertebrates with the object of indicating that from the anatomical structure a certain amount of information can be obtained as to the degree of functional activity of which the organ is capable. The preparations included sections of the eye of the octopus, the clam, the spider, the caterpillar, the house fly, the bee, and the snail. Sections of the eye of the Australian mole and of the leech were shown to illustrate the fact that loss of functional activity leads to anatomical degeneration.

Dr. BUCHANAN also demonstrated a case of Rupture of

the Pectinate Ligament. A man was struck on the left eye by a broom handle at the end of June, 1906. Amongst other injuries to the eye there was what appeared to be a large coloboma of the iris in a downward and inward direction accompanied by high tension and loss of vision. The case was considered to be one of rupture of the pectinate ligament with displacement of the iris and ciliary body backwards along the sclera. As the eye continued to be painful it was excised in January, 1907, when, after histological examination, the diagnosis was proved to be correct. Microscopic preparations were shown.

Dr. ANGUS MCGILLIVRAY read a paper on the Treatment of After-Cataract. To obviate the dragging on the ciliary body and the risk of cyclitis he divided the capsule diagonally from above downwards and inwards by very short and steady sawing movements by means of a specially designed cutting needle. Since adopting this sawing method of dividing opaque capsule after cataract extraction little or no trouble had been experienced; so little, in fact, that he did not now hesitate to divide an opaque capsule when the vision was, from this cause, below $\frac{1}{10}$ths.

Dr. MCGILLIVRAY also showed a very convenient Storage Battery for ophthalmic use.

Dr. ARTHUR H. H. SINCLAIR and Dr. THEODORE SHENNAN described a case of Perinaud's Conjunctivitis in a man, aged 61 years, who was a painter's labourer. The left eye became affected during the third week in July, 1906. About three weeks later the surrounding lymphatic glands became enlarged. The patient was under observation for four months and had not completely recovered when he ceased his attendance and could not be further traced. Dr. Shennan described carefully the histological and bacteriological condition found. Two varieties of staphylococci were the organisms discovered.

Dr. W. B. INGLIS POLLOCK described a case of Telangiectasis of the Retinal Capillaries and Venous Radicles. The condition followed on fracture of the left side of the skull, due to a heavy weight falling upon the head. He showed an ophthalmoscopic drawing of the fundus.

Numerous card specimens were shown.

Dr. SINCLAIR showed: (1) A Collapsible Apparatus for Testing the Field of Vision; (2) the charts from a case of Glaucoma, showing remarkable restriction of the fields of vision in both eyes; and (3) a case of Retinitis Punctata Albescens.

Dr. BRUCE showed two cases of Intracranial Neoplasms.

Dr. ROBERT A. FLEMING gave a microscopical demonstration of an Optic Neuritis in Relation to Intracranial Tumours, with special reference to the changes in the neuroglia cells.

Dr. E. BRAMWELL exhibited: (1) A Brain showing Occipital Abscess from a case in which epileptic fits were preceded by visual aurae and in which hemiachromatopsia developed; and (2) a case of Ocular Palsy, with Congenital Absence of Cranial Nerve Nuclei.

Mr. G. A. BERRY showed several cases. He exhibited a Loupe for the Use of Myopes and Test Objects for Illiterates.

Dr. G. MACKAY exhibited some Unusual Clinical Cases and Coloured Drawings.

Dr. W. G. SYM showed a case of Complete Congenital Anophthalmos and other cases.

Dr. J. V. PATERSON showed a case of Tubercle of the Conjunctiva and a well-marked case of Reticular Keratitis.

Dr. A. MAITLAND RAMSAY exhibited on Opaque Projector for Teaching Purposes and some Pathological Specimens.

Lieutenant-Colonel H. HERBERT, I.M.S., gave a lantern demonstration of the Sinuous Lid Border as a sign of Trachoma.

EPIDEMIOLOGICAL SOCIETY.—At a meeting of this society on May 31st Dr. Axel Holst, Professor of Hygiene of the University of Christiania and Foreign Secretary for Norway, said that the symptoms of ship beri-beri consisted in weakness and a pronounced dropsy of the lower limbs, extending often to other parts of the body. There were also shortness of breath and other symptoms of a weak heart, causing not infrequently sudden death from acute cardiac paralysis. Considering that neuritis was the essential symptom of the beri-beri of tropical countries and Japan it seemed rather doubtful whether ship beri-beri was identical with it. Further, the great majority of patients suffering from the ordinary—i.e., dropsical—ship disease recovered as soon as they were able to change their diet, which was not the case with the disease of the tropics and Japan. Proceeding to the question what defects of the food might be able to cause ship beri-beri, he said that the Norwegian sailors nearly always used on long voyages soft bread of an inferior quality, to a large extent raw and baked without yeast. The sailors on long voyages were mostly compelled to use dried potatoes instead of fresh ones, because the latter did not easily keep in the tropics. Dried potatoes, however, as well as dried green vegetables, during the North American War of Rebellion proved to be of no value as a remedy against scurvy. At the same time they were, in course of their preparation, usually boiled in water containing some hydrochloric acid before being dried. Norwegian sailors ate very freely of tinned meat that had been strongly heated. Such meat might, however, have lost some of its anti-scorbutic power, or it might even be able to produce scurvy, because strongly heated milk seemed to be able to produce infantile scurvy. Dr. Holst showed from his experiments on pigeons that bread of wheat-flour—i.e., the flour ordinarily used by Norwegian sailors in tropical waters—was much more injurious than rye bread. The experiments further showed that the effect of wheat bread prepared with baking powder similar to the poor quality bread used by the Norwegian sailors on long voyages was more injurious than that of bread baked with yeast. The latter difference could not be ascribed to any poisonous effect of the baking powder, because the rye-bread, prepared in the same way, did not produce the same result. From experiments on chickens it seemed evident that beef was able to produce polyneuritis in chickens, even when boiled at a lower temperature than the 120° C. usually reached in the manufacture of tinned meat, and the polyneuritis must be considered as due to a special injurious effect of the nutriments applied. The beef had always recently been boiled. The effect of the strongly heated beef could only be ascribed to a decomposition of one or more constituents of the beef produced by the high temperature or high steam pressure used in the boiling. The experiments were of interest on account of the additional light which they threw upon the deterioration of food by strong heating. That point was important not only in regard to the nutritive value of tinned food but also in reference to the steam boiling of different articles of food used in modern hospitals, because the latter was often carried out at a temperature of about 110° C., which temperature when applied for half an hour produced alteration of the nutritive elements of beef.—Dr. Axel Holst and Dr. Theodor Frölich contributed a paper on the Etiology of Scurvy, showing that a diet consisting of grains, groats, and bread, regularly produced in guinea-pigs a disease that was macro- as well as micro-scopically identical with scurvy. On the other hand, this disease did not appear when the animals were fed on fresh cabbage or boiled fresh potatoes only. Again, it was produced by an exclusive feeding on dried potatoes. It was further found that the disease was influenced favourably by the nutriments which were known in human pathology as "anti-scorbutica," but that cabbage lost some, but not all, of its anti-scorbutic power when boiled for half an hour at 110° C. Examples were given showing that the same or similar nutriments that produced the disease in guinea-pigs had also produced scurvy in man. On the other hand, they had not hitherto been able to produce the malady known as ship beri-beri. It was true that they had repeatedly seen, after an addition of anti-scorbutic nutriments to grains or bread, the occurrence of a disease with œdema, but without hæmorrhages. The œdema, however, did not occur regularly, nor was it accompanied by neuritis. They were, therefore, at present not able to form any distinct idea as to the causation of ship beri-beri. The same applied to the question as to the precise causes of the influence of certain diets.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on May 17th at which the Wightman lecture was delivered by Dr. Frederick Taylor on Pneumonia in Children. He discussed the relative frequency of lobar and broncho-pneumonia in children. He mentioned that till the test of inflation was systematically employed collapse was confused with broncho-pneumonia; when this was demonstrated it was considered that the previous error had led to an under-estimation of the importance of lobar pneumonia in children. This had led to many papers on the subject. Clive Riviere stated that the greatest incidence of lobar pneumonia was in the second year of life and after that in the third year. Vere Pearson also found croupous pneumonia more common in infancy than in any other age of childhood. Bertram Abrahams regarded it as a common affection from the age of two years upwards. Ashby considered it more common after the first two years. In Guy's Hospital Dr. Taylor found during one year 35 cases

of broncho-pneumonia and 24 of lobar; of the latter only one was as young as two years of age. In the post-mortem records of lobar pneumonia during 1905 of 50 cases only seven were in children, one in the first year, two in the second, and one in the third year. Similar discrepancies existed with regard to the mortality of lobar pneumonia, considered by most writers not to amount to more than from 1 to 5 per cent., while others put it as high as 25 per cent. or even more in the first two years of life. Very different estimates had been given of the relative frequency of the two forms of pneumonia, but lobar pneumonia had been generally admitted to be less frequent by those who had seen the largest number of cases. The discrepancies were due to many causes, such as varying conditions of admission into the hospitals, the influence of epidemics, or errors of diagnosis, &c. Some relied upon a crisis as a sign of lobar pneumonia but in the first two years half the cases recovered without this sign. Again, extensive consolidation might be produced by broncho-pneumonia and lobar and broncho-pneumonia might co-exist. Bacteriology was of little help. The conclusions seemed to be that great differences in frequency might occur in different places and at different times, broncho-pneumonia was uncommon after three years of age, and lobar pneumonia was more frequent in infants than used to be thought, possibly it varied more with epidemic prevalence than broncho-pneumonia. The observations of Nobecourt and Voisin were mentioned; they found that when nervous symptoms appeared the cerebro-spinal fluid was unusually abundant, and in two cases it was turbid and contained polymorphonuclear cells and pneumococci. Dr. Taylor concluded by alluding to treatment and to the probable value of a bacteriological method when such a treatment was discovered.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A laboratory meeting of this society was held on May 8th, Dr. A. Hill Griffith being in the chair.—The following specimens, &c., were shown:—Dr. J. Cameron: Microscopical specimens illustrating the Peripheral Development of Nerve Fibres.—Dr. D. E. Core: (*a*) Microscopical specimens of Blood from a case of acute Lymphatic Leucocythæmia and (*b*) Verminous Bronchitis in a hedgehog.—Dr. E. N. Cunliffe: Blood films illustrating (*a*) a case of Splenic Anæmia of unusual type and (*b*) Lymphatic Leucocythæmia.—Dr. Hill Griffith: Pathological Eye specimens.—Dr. A. E. Johnson: Method of Sterilising Animal Ligatures.—Dr. Arnold W. W. Lea: Lantern demonstration illustrating various Micro-organisms occurring in Puerperal Septic Metritis.—Professor J. Lorrain Smith: An unusual case of Cirrhosis of the Liver.—Dr. G. E. Loveday: Wright's Method of Counting the Blood Corpuscles.—Dr. W. Mair: Hydrocephalic Brain in a case of Tuberculous Tumour of the Cerebellum.—Dr. C. H. Melland: Granular Degeneration of the Red Corpuscles in Lead Poisoning and other conditions.—Dr. H. H. McNabb: Methods of Mounting Eye Specimens, with examples.—Dr. J. G. McNaughton: (*a*) Congenital Absence of One Kidney, and (*b*) Cerebellar Abscess.—Dr. D. Orr and Dr. R. G. Rows: Sections showing Invasion of the Spinal Cord by Micro-organisms *viâ* the Spinal Nerve Roots.—Dr. A. Sellers and Dr. Sidebotham: The Bacteriology of Cerebro-spinal Meningitis.—Dr. C. Powell White: (*a*) Apparatus for Regulating the Temperature of a Warm Stage for the Microscope, and (*b*) Anisotropic Globules in Tumours.—Dr. R. B. Wild and Dr. C. S. O'Neill: An Improved Method for the Physiological Standardisation of the Digitalis Group.—Mr. R. H. Wolstenholme: Stomach of a Horse with Larvæ of the Gastrophilus equi *in situ*.

THE ROYAL BRADFORD EYE AND EAR HOSPITAL.—The Bradford Eye and Ear Hospital, which was founded in 1857 by the late Dr. Edward Bronner and will this year celebrate its jubilee, is in future, by the permission of the King, to be called "The Royal Bradford Eye and Ear Hospital." It is now one of the largest special hospitals in the kingdom and contains 46 beds. During last year 7270 new patients were treated, 1091 in-patients were admitted, and 1084 major operations were performed, including 160 extractions of senile cataract. Since the foundation of the hospital 158,848 cases have been treated and 20,791 major operations have been performed. The present hospital is too small for the large number of in- and out-patients and the committee is considering the question of building a large separate out-patient department.

Reviews and Notices of Books.

Geschichte der Medizin (*History of Medicine*). Von Dr. MAX NEUBURGER, a.o. Professor für Geschichte der Medizin an der k.k. Universität in Wien, &c. I. Band. Stuttgart: Ferdinand Enke. 1906. Pp. 408. Price M.9, or 9*s*.

HOWEVER distinct the various sciences may appear they are yet only branches of human knowledge and are largely influenced by each other and by current metaphysical and even ethical opinions. The science and art of medicine are thus to a great extent dependent on a variety of surrounding circumstances, and it has been the aim of the author in the work before us to trace the gradual development of the healing art in connexion with that of knowledge in general and to point out the traces which are to be found at different epochs of the moulding of its tenets in accordance with the philosophy of the day. In the earliest times, as represented by the civilisations of Babylon and Egypt, superstition of all kinds was rampant. Gods and demons were believed to interfere directly with all the affairs of human life, and charms and incantations were an important part of medical procedure. Yet as knowledge grew and the mechanical and physical sciences were evolved medicine tended to develop on scientific lines; a large number of medicinal substances were recognised and surgery reached a considerable degree of technical efficiency. In Greece where superstition was early thrown off and free speculation pushed into all regions of the unknown rational medical methods were soon elaborated, and beside the spiritualistic and occult rites of the Orphics and other mystics, schools of medicine came into existence in association with various temples and priestly orders, at which a surprising degree of real knowledge appears to have existed. About the period of the highest intellectual development of the Greek race, in the fifth century before Christ, arose the great master of medicine—Hippocrates—whose name is still synonymous with the spirit of the true physician. Discarding all reliance upon occult influences and regarding all diseases as equally due to natural causes—none more directly sent from heaven than another—he pointed out the sure way to advance the knowledge of medicine, by careful observation of clinical phenomena, and at the same time laid down those canons of professional conduct which are still regarded as binding on the physician in his relations with the sick. Just as Socrates represents the application of the inquiring Greek spirit to the philosophy of ordinary life, so Hippocrates personifies the scientific spirit in medicine, the refusal to be bound by preconceived theories and the recognition of the good of the individual patient as the object at which to aim. After his death, with the decadence of Greek intellectual life, a large number of different sects arose, each insisting on some one aspect of the problem of disease and neglecting that sane appreciation of the whole subject which alone enables us to see order among a chaos of details, instead of distorting the facts to fit a fine-spun metaphysical theory. With the conquests of Alexander and the spread of the influence of Rome Greek methods of thought were distributed throughout the world and brought under their influence Asiatic and African races as well as those of Europe. The silver age of Greek literature at the court of the Ptolemies corresponded with a development of the arts and sciences, and the practical side of medicine was advanced by such teachers as Herophilus and Erasistratus. Anatomy and surgery were brought to a high pitch of development, whereas little of importance was added to the field of pathology. In Rome medical knowledge owed everything to imported Greek culture; no original writer of any importance arose among the

adherents of the old empirical methods of Italy. The writings of Pliny and Celsus in the days of the empire are valuable storehouses of information as to the history of medicine and show the advances made by the practical Roman mind when stimulated by Greek theory, and still later the names of Aretæus, Rufus, and Soranus form landmarks on the road of progress. Finally, by the genius of Galen the scattered facts and theories observed and elaborated by many predecessors were united into a complete methodical system and his works remained until comparatively recent times the recognised authority in all medical matters.

Professor Neuburger has written an interesting, indeed a fascinating, book, and we shall await with impatience the appearance of the second volume which will presumably deal with mediæval medicine and bring us through the dark ages into the dawning light of the Renaissance, and finally to the wonderful illumination of all the sciences which was the glory of the past century. We can only hope that the second volume will equal the first in merit and that the whole book will find a translator into our own language capable of doing justice to the excellence of the original.

Hypnotism or Suggestion and Psychotherapy. By Dr. AUGUST FOREL. Translated from the fifth German edition by H. W. ARMIT, M.R.C.S. Eng., L.R.C.P. Lond. London: Rebman, Limited. 1906. Pp. 370. Price 7*s.* 6*d.* net.

THIS book is the first English edition of Dr. Forel's work on Hypnotism and is a translation of the fifth edition of this writer's well-known work. The opening chapter is, as the author states, of a theoretical nature and much psychological deliberation is required in order to grasp it. After briefly referring to "The Theory of Mneme" of Richard Semon, he rapidly reviews certain data which go to prove that we have no right to presume that consciousness itself has no part in the activity of the brain, nor is it correct merely to study the phenomena of superconsciousness for "the contents of our superconsciousness is always influenced and caused by hypoconceived activities of the brain." He devotes several pages to the study of Dualism and Monism. He speaks of "monistic identity" rather than psychophysical parallelism and brushes aside as scientifically untenable the dualistic hypothesis. He makes a distinction between "pure scientific monism" (the hypothesis of identity) and "metaphysical monism." The latter teaches that there is nothing "psychical" without being at the same time "physical"; further, there is no "matter" without "energy" and no "energy" without "matter," consequently there can be nothing "soulless" (Unbeseeltes) in the world. The "hypothesis of identity," according to Dr. Forel, is not so wide, for "it is content to accept the identity of being of every psychical phenomenon, which is available for direct psychological observation, with its so-called brain-physiological correlative, and leaves the hypothesis of the 'soul' to metaphysical speculation." The second chapter deals with the conditions of consciousness, and reference is made to some personal researches of the author.

Under General Remarks on Hypnotism Dr. Forel briefly reviews the theories held by the various schools on this subject. He casts aside "Mesmer" and the "materialisation of spirits," and equally objects to the somatic theories; and finally concludes his remarks on this subject by saying, "there is therefore only one theory which stands in accord with the scientifically assured facts of hypnotism, and which explains the same satisfactorily, and this is the 'suggestion' theory of the Nancy school. All the others are built on misconceptions." When discussing sleep Dr. Forel states that "the relationship of hypnosis to normal sleep is unmistakeable." Although agreeing that in many ways sleep-consciousness appears to resemble hypnosis, viewed from the evolutionary standpoint the association between the two is difficult to connect. Is it due to auto-suggestion that the infant sleeps? It certainly cannot be the result of habit when it occurs in the opening hours of a child's existence, however much of a habit it may ultimately become. The author deals with many interesting subjects in the chapter on Suggestion; especially instructive are the sections on resistance of the hypnotised person, amnesia, suggestion as to time, "hallucination rétroactive," or suggested falsification of memory and its relation to those false accusations so commonly made by insane persons. In a subsequent chapter, when discussing suggestion and disorders of the mind, the author writes: "I cannot emphasise sufficiently that suggestibility is an absolute normal characteristic of the normal human brain," and he strongly controverts the Charcot school who define hypnosis as a form of hysteria.

Dr. Forel differs from an authority such as Wetterstrand in his belief in the efficacy of hypnosis in cases of epilepsy, for he considers that only a limited number of these cases are curable by suggestion. The author makes a strong reply to Dubois's book entitled "Les Psychonévroses et leur Traitement Moral" and severely criticises many of this writer's opinions. In the chapter on Hypnotism and Psychotherapy Dr. Forel records many interesting cases which he claims to have cured by hypnotic suggestion and these cases consist of persons suffering from disorders of the menstrual function, constipation, insomnia, and so on. The author makes a direct attack on medicinal therapy and directs against it a scathing criticism. A certain amount of what Dr. Forel states may be true but he is too carried away in the belief in his own subject to be free from bias. On p. 188 we read that "of all people the insane are the least suggestible, and those whose mental disturbances are severe are usually absolutely unsuggestible." Therefore even from Dr. Forel's standpoint they are fair persons on whom to watch the effects of drugs, for here we can largely eliminate the power of suggestion, and yet unfortunately for his argument drugs act with equal potency on the insane as on the sane. The author is too reckless in his statements, for in his annoyance at the many unwarrantable charges that have been from time to time hurled at the school of "suggestion" he makes equally extravagant statements which would be difficult to substantiate. Referring to the subject of crime in its relationship to hypnosis the author states that he is convinced "that every conceivable crime may be committed on a hypnotised person, provided that a higher degree of hypnosis is attained." Nevertheless, he believes this danger can be over-rated as it is possible by suggestion to protect the hypnotised from the influence of unscrupulous persons. We cordially agree with Dr. Forel when he states "that public exhibitions of hypnotised somnambulists ought to be rigidly prohibited on the ground that they represent a gross nuisance which is detrimental to public morals and public health."

Except for the chapter on therapeutics we have no hesitation in recommending this work as a useful text-book on hypnotism, as it contains much valuable information, and Mr. Armit can be congratulated on his careful translation.

Employment Pictures from the Census. By M. G. SPENCER and H. J. FALK, M.A. With a Preface by C. S. LOCH, D.C.L., LL.D. London: P. S. King and Son. 1906. Pp. 101. Price 2*s.* 6*d.* net.

THIS book must be read with imagination as, in the words of the writer of the preface, "the figures are people—men and women—they are a vivid interpretation of life." We cull from it the following particulars. The total population of the County of London on March 31st, 1901, was 4,536,541 persons, comprising 3,598,253 persons older than ten years of age and 938,288 children under that age. The numbers of each sex were, of the older persons, 1,924,368 females and 1,673,885 males; of the children, 470,088 girls and 468,200 boys. As regards occupation, of the females 1,205,037 are classed as "unoccupied" (we do not know what the ladies themselves would say to this) and 719,331

as "occupied"; and of the males 1,399,969 were occupied and 273,916 unoccupied. Further, as regards occupation, the compilers divide each of the sexes into five groups, comprising "orders" or trades arranged according to the importance of the number of persons employed therein. Of the occupied males, 781,798, or 55·8 per cent., of them were employed in the conveyance of men, goods, and messages, in building, in providing food, tobacco, drink, and lodging, in commercial life, and as general or undefined workers and dealers; while 367,545 others of them, or 26·3 per cent., were employed in the following "orders"—viz.: (1) metals, machines, implements, and conveyances; (2) dress; (3) professional; (4) paper, prints, books, and stationery; and (5) wood, furniture, fittings, and decorations. These two groups account for 1,149,343 of the occupied males, or 82·1 per cent. of the total thereof occupied. The balance of them—viz., 250,626 men, or 17·9 per cent.—is made up by the remaining three groups comprising 12 "orders."

Of the occupied females, 586,841, or 81·8 per cent., of them were employed in domestic offices and services, in dress, in professional occupations, and in providing food, tobacco, drink, and lodging. The balance of them—viz., 132,490 females, or 18·2 per cent.—is made up by the remaining four groups comprising 16 "orders." In London in 1901 the greatest number of occupied men was employed in the conveyance of men, goods, and messages to the extent of 243,924, or 17·4 per cent., of the total occupied men, and the greatest number of occupied females was employed in domestic offices and services to the extent of 328,337, or 45·8 per cent., of the total occupied women. It is a case of transportation and domestication. The book then proceeds to deal by means of diagrams and tables with the proportion of the various orders of the occupied in the 29 metropolitan boroughs, of which Islington, Lambeth, Stepney, Camberwell, St. Pancras, and Wandsworth, in descending order of magnitude, include over one-third of the population of the county of London, and of which Wandsworth, Woolwich, Lewisham, Camberwell, Lambeth, Greenwich, and Hackney, include over half the acreage. The proportion of males to females varies greatly in the different boroughs. Thus in Kensington there are more than three women to every two men, but in Woolwich men outnumber women, which is doubtless due to the numbers at the Arsenal and in the army. The first general feature is the predominance in the boroughs of the same orders as in the county as a whole. As regards domestic service a table shows that in Hampstead there were 16,998 families or separate occupiers and 13,843 domestic indoor servants, male and female, and in Kensington 38,349 families and 30,670 servants—that is, 80 per cent. of the families had servants, whereas in Shoreditch only 5·7 per cent. of the families had servants. In the general or local government of the country there were engaged eight males to one female. Men engaged in the defence of the country were distributed mainly at Woolwich, Westminster, Greenwich, Kensington, and St. Pancras.

Those males occupied in "professional occupations and their subordinate services" are distributed chiefly among the following boroughs in order of their importance: Lambeth, Islington, Kensington, Wandsworth, St. Pancras, Westminster, Camberwell, and St. Marylebone; while the females thus occupied are chiefly resident in Lambeth, Islington, Wandsworth, Hackney, Kensington, and Camberwell. We are told that "the medical profession is one of the few occupations in which women outnumber men, this being accounted for by the large number (nearly 16,000) of women engaged in nursing." We presume that the term "medical profession" as here used is meant to include ancillary or "subordinate services." We are told also that "there are 92 women doctors and surgeons in London, as against 4709 men. The expression "doctors and surgeons" is quaint. It is stated that there are no women veterinary surgeons, engineers, or surveyors in London. The boroughs which have the largest proportion of male and female clerks are Islington, Camberwell, Lambeth, Hackney, and Wandsworth. The women have been gaining on the men at a rate probably too high to last and already form nearly 20 per cent. of the total. More than one-third of the men and more than one-fourth of the women engaged in tailoring in London are to be found in Stepney. Of men under "sanitary service" nearly half are found in Islington, Lambeth, Stepney, Paddington, and St. Marylebone. Speaking roughly, in the whole of London about one-third of the total unmarried women over 15 years of age are engaged in domestic services.

These are only a few of the interesting points. The book contains numerous diagrams and we agree with Mr. Loch that "to read it well the text and pictures have to be studied together and then recast in the mind so as to form living 'pictures' of the industrial life of the county, or of the metropolis, or of the metropolitan boroughs."

LIBRARY TABLE.

On the Evolution of Wound Treatment during the Last Forty Years. By Sir HECTOR CLARE CAMERON, M.D. Glasg. Glasgow: The University Press. Pp. 96.—Under this title are published the two James Watson lectures delivered in 1906 which were then briefly reported by our Glasgow correspondent; their issue in book form is opportune, for in a year that has heard much said in Lord Lister's honour no better tribute to his epoch-marking work has been paid than is afforded by this book. Its distinguished author had the privilege of assisting Lord Lister in his pioneer work at Glasgow, and these lectures have passed under the eye of the master himself, so that the record which they give of the evolution of modern surgical methods is doubly trustworthy. Sir Hector Cameron is very naturally a firm adherent of the true Listerian methods and deprecates the differentiation of a so-called "aseptic" school of teaching; he urges that the reaction that caused it was entirely due to a misconception of Lister's methods which were successfully practised by their author until he retired from practice 11 years ago, and gives his own experience to show that simple "antiseptic" methods are as safe and trustworthy as, and far less cumbersome than, those which have called into existence the elaborate machinery of the modern operating theatre. He points out that the criticism so often passed on Lister's earlier methods of carbolised "putty" and shellac dressings, that these were devised to seal up wounds, arises from a complete misconception of their application and gives their inventor the credit of introducing the now universally employed open-meshed gauze for surgical dressings. A very interesting note by Lord Lister is appended on the preparation of the perfected "double cyanide" gauze, in which he gives good reason why this dressing should be moistened in carbolic and not perchloride lotion. The story of Lister's final abandonment of the carbolic spray, when he at length became convinced that it was not necessary, eloquently testifies to the splendid absence of prejudice that he has shown throughout his life work. This little book is a fascinating addition to recent surgical history and may be very profitably read. We are surprised at the author's statement on p. 30 that cat-gut is now almost universally employed in tying arteries; this is certainly not the case in London.

Glimpses of American Surgery in 1906. By C. HAMILTON WHITEFORD, L.R.C.P. Lond., M.R.C.S. Eng. London: Harrison and Sons. Pp. 63. Price 2*s.* net.—The author of this little book has jotted down the impressions of the practice of surgery in America that he gathered during a

visit to that country last year. Many years ago, when the late Frank Buckland's "Curiosities of Natural History" was issued, one reviewer remarked, "It reads like the contents of a note-book thrown out pell-mell," and we feel inclined to repeat that saying of the present small work, with the proviso, however, that this was probably just what its author intended. Most of the observations refer to differences of detail between English and American methods and they include some interesting information, especially that about the "Mayo clinic." The author's conclusion is that "American surgery is, with one notable exception—that of the treatment of the vermiform appendix—of the highest class, being based on logical reasoning and common sense." We acquiesce in his exception, at least as far as that hospital is concerned of which Mr. Whiteford remarks: "A grand total of 1031 appendices removed from 2727 patients."

The Poetical Works of John Keats. Edited by H. BUXTON FORMAN. The Oxford edition. London: Henry Frowde. 1907. Pp. 486 and index. Price 3*s.* 6*d.*—Medical men have not infrequently written verses and some have written poetry and there is at least one medical real poet at the present day. But of all medical poets Keats stands on Parnassus' top and we are most grateful to both Mr. Forman and Mr. Frowde for this admirable edition. It consists of the whole of Keats's known works in verse, with footnotes giving variorum readings, a most interesting introduction, two portraits, and facsimile titles, so far as the type goes, of Keats's three books. We hope that "The Oxford" Poets will eventually include an edition of Cowley, who was both a poet and a D.M. of the University of Oxford, though as he obtained the degree "by order of the Government," it is possible that his medical knowledge was not profound.

Notes on Hastings and St. Leonards. By A. SCARLYN WILSON, M.B., D.P.H. Cantab., Medical Officer of Health of the Borough.—This little brochure sent to us by the mayor of Hastings gives good reason for the claim of that old town to be considered a fine health resort; indeed, such a reminder can hardly be necessary to anybody who has spent a winter in St. Leonards and basked in December or February sunshine on the "White Rock" parade, but to others it gives the information that the Campbell Stokes' recorders show a sunshine record during the last five years which alone serves to recommend it to invalids. The meteorological data supplied by Mr. H. Colborne, M.R.C.S. Eng., the borough meteorologist, are very full. An attraction that Hastings can also claim for those not confined to the town by ill health is the beautiful and interesting nature of the country that constitutes its "*hinterland*." We congratulate Dr. Wilson on the attractive arrangement of his brochure.

London Botanic Gardens. By PIERRE E. F. PERRÉDÈS, B.Sc. Paper No. 62. London: The Wellcome Chemical Research Laboratories.—This paper gives a most interesting account of the development and present conditions of the various London Botanic Gardens—i.e., the Royal Horticultural and Botanic Societies' Gardens, the Kew Gardens, and the delightfully named Chelsea Physic Garden. It is to the last and oldest that half of the book is devoted and we are told in the introduction that this and all the other public botanic gardens owed their inception to the collections of private herbalists in the seventeenth century. The Chelsea Garden was founded by the Society of Apothecaries of London in 1673 and in 1722 Sir Hans Sloane, the illustrious President of the Royal College of Physicians of that date, who was the lord of Chelsea Manor, presented it, under certain light conditions, to the Society, "to the end," as the deed of conveyance has it, "that the said garden might at all times thereafter be continued as a physick garden, and for the better encouraging and enabling the said Society to support the charge thereof, for the manifestation of the power wisdom and glory of God in the works of the creation, and that their Apprentices and others might better distinguish good and useful plants from those that bore resemblance to them and yet were hurtful, and other the like purpose." The troublesome task of distinguishing between official specimens may well have been less irksome in that old-world garden than amongst the dried-up preparations that confront the student in the modern materia medica museum. It is pleasing to note that one of the duties laid down for the curator or praefectus horti was to accompany students in summer "herborisings" or botanical field days when he was "desired to use his best endeavours to preserve strict decorum among his pupils, and for directing and confining their attention solely to the intended business of the day"—a very necessary injunction, we have no doubt. The history of the gardens up to the present day including their re-establishment as an adjunct to the botanical schools of London under a committee is fully given; it is interesting to note that the latter includes *ex-officio* the Earl of Cadogan as the lineal descendant of Sir Hans Sloane whose statue in the gardens still testifies to his ancient generosity. The other botanical gardens of London are well described and lists are given of the medicinal plants occurring in all of them. The paper is well illustrated with reproductions of photographs and plans which include an elaborate eighteenth century "survey" of the Chelsea Garden. The author and the publishers are to be congratulated on having issued such an acceptable paper.

JOURNALS AND MAGAZINES.

The Journal of Mental Science.—The number for April contains the Morison lectures, by Dr. A. R. Urquhart of Perth. The subject of these lectures this year was Insanity, with Special Reference to Heredity and Prognosis. The first lecture is entitled "Prolegomena," the second "Statistics," and the third "Somatic Correlations and Résumé." The next original article is by Dr. W. W. Ireland on the Psychology of the Crusades. In this paper he gives examples of the great credulity of the people in the Dark Ages. This article is followed by an interesting and instructive paper by Dr. J. F. Sutherland, Deputy Commissioner in Lunacy for Scotland. The subject is Recidivism Regarded from Environmental and Psycho-pathological Standpoints. He introduces his subject by saying that "Recidivism is the French-coined term most appropriate to express the persistent, reiterated lapses of the same individual in that small section of habituals found in every country, both among criminals engaged in serious crimes against person and property and among petty offenders, whose delinquencies or misdemeanours are drunkenness, public disorder, prostitution, and vagrancy." Dr. G. F. Barham of Claybury Asylum writes a short paper on Notes on the Management and Treatment of the Epileptic Insane, with a Special Reference to the NaCl-free (or "Hypo-chlorisation") Diet. He refers to the difficulty of carrying out this treatment in a large asylum; on the other hand, he points out that something can be done in a modified form. For instance, he found that by the simple substitution of sodium bromide for table salt the results were distinctly encouraging both in diminishing the number and the severity of the seizures and in improving the general behaviour of the patients so treated.

The Journal of Clinical Research. No. 1, Vol. I.—We have received the first number of this journal which is the official organ of the Clinical Research Association, Limited. It is intended to issue the journal periodically at intervals of about three months. Among the contents of this number is an article by Dr. Nathan Raw upon Human and Bovine Tuberculosis, with Reference to Treatment by Special Kinds of Tuberculin. Other articles deal with the methods of collection and preservation of morbid growths and tissues for

examination and give directions for the collection of specimens of blood, sputum, diphtheritic swabs, and the like. The Post-Office regulations for the transmission of such substances by post are also given in full.

The Gentleman's Magazine.—The number for the current month has some very interesting articles. Mr. Lewis Melville recalls the career of that Frederick Prince of Wales of whom his father said, "My dear first-born is the greatest ass, the greatest liar, the greatest canaille, and the greatest beast in the whole world, and I heartily wish he was out of it." This is a hard verdict but it must be said that "Fred, who is dead," was not an estimable character. Mr. Carl Bock's article upon Chinese Beggars will be quite news to many. They have an official chief who has an income of about $15,000 per annum. Again, there are Imperial Beggars who are descendants of the ancient Ming dynasty. They "obtain a livelihood by swearing false oaths in court." Mr. C. W. Brodribb gives us a little dialogue between an Incunabulum (which, we may remind our readers, is the title given by German bibliophiles to an early printed book) and its owner, the book in question being a Tacitus, and Mr. C. H. Dant describes the ceremonies of that curious survival of ancient folk-rites, the Helston Flora Day.

New Inventions.

"FINGER-GRIP" FORCEPS.

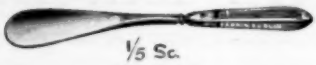
THESE forceps are intended to take the place of the finger and thumb in grasping any organ, such as the uterus, without damaging it. The blades terminate in oval rings into which are fixed cone-shaped springs. The apposition of these resembles the action of the "pads" of the finger and thumb in grasping and holding a soft organ. The blades

may with advantage be covered with an old rubber glove finger. The great superiority they possess over the ordinary finger-grip of an assistant is security of grasp and the small amount of space occupied—that is to say, the hand of the assistant is not in the way. They have been made for me by Messrs. White and Wright, 93, Renshaw-street, Liverpool, and may be obtained in two sizes.

W. BLAIR BELL,
Assistant Gynæcological Surgeon, Royal Infirmary, Liverpool.

A PERINEAL "HORN."

Messrs. Fannin and Co. of Dublin have made to my design a simple instrument which may be called a perineal horn. It is practically the principle of the shoe-horn reversed. I have put it to many tests and am convinced that by its use rupture of the perineum will become a complication of much less frequency. In every case in which it has been used the perineum has never caused the slightest anxiety and needles and sutures are now omitted from my midwifery bag. The action of the perineal horn is that of a protector to the maternal tissues and a distributor of the pressure over the internal surface, preventing that initial rupture of the wall of the vagina of which the perineal tear is only the outward and visible sign. It will be observed that the rent takes place generally after the birth of the forehead and occurs simultaneously with the elastic rebound of the perineum. The perineal horn inserted between the child's face and the posterior vaginal wall takes all undue



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strain off the tissues, internal and external, equalises the pressure, and affords a smooth surface along which the child's face glides. By manipulation the pressure on the thinned-out margin of the perineum can be transmitted posteriorly.

JOHN F. ELLIOTT, L.R.C.P. & S.Irel.

Verulam, Natal, S.A.

ASYLUM REPORTS.

Kingseat Asylum, Aberdeenshire (Annual Report for the Year ending May, 1907).—The second annual report on Kingseat Asylum has just been issued by Dr. H. de M. Alexander, the medical superintendent. The total cost of the asylum at May 15th, 1905, amounted to £125,335. During the year ending May 15th last there was added to the providing account the sum of £5515 for the improvement of grounds, &c., making a total cost of £130,851 at that date. For the year ending May 15th last the total cost of maintenance amounted to £9471 and the average number of patients for the year being 375, the cost of maintenance per patient was £25 6*s.* 5½*d.* The reports on the asylum by the Commissioners in Lunacy continue to be satisfactory. On Dec. 31st, 1906, there were on the register 412 patients, of whom 216 were men and 196 were women. The most prevalent forms of mental disease among admissions were acute melancholia, acute mania, and delusional insanity due to alcohol. Six patients, all men, were admitted suffering from general paralysis of the insane. Among the assigned causes of insanity 29 patients were hereditarily predisposed and eight had suffered from one or more previous attacks. Among the physical exciting causes alcohol accounted for 18 cases, pregnancy and lactation for seven, general paralysis for six, acquired epilepsy for three, influenza for three, acute rheumatism for one, and injury to the head for one. Neurotic inheritance was probably present in all cases where the exciting cause of the mental attack was attributed to alcohol, as in those cases where inquiry into the family history proved futile the presence of neurotic stigmata in the individual told its tale. In connexion with moral causes five were assigned to emotional stress. The discharges during the year numbered 71. 29 men and 26 women were discharged recovered. The percentage of recoveries on the admissions was 41·6. Of those discharged unrecovered five men and three women were transferred to other asylums, three men and four women were "boarded out," and one man was discharged by escape—this man broke his parole and not being taken back within the statutory period of 28 days he was discharged. The deaths numbered 34—18 men and 16 women. The chief causes were pulmonary tuberculosis, senile asthenia, and valvular disease of the heart. Tuberculous disease of the lungs was definitely ascertained on admission in only one of the seven patients who eventually died from that disease. It must be remarked, however, that in the insane it is almost impossible to diagnose the incipient stage of tuberculous disease of the lungs. All these patients suffered from incurable mental disease and from those particular varieties of chronic insanity with which tuberculosis is unfortunately so often associated. Three accidents occurred to patients during the year. One was a case of fracture of the humerus, another a slight accident in the laundry, while the third was a case of ruptured intestine caused during a struggle between a warder and a refractory patient. Into this last case the usual inquiry was held and no blame was attached to the attendant. On Dec. 31st, 1906, there were 86 vacant beds, 33 male and 53 female, and although the decrease in the admission-rate for the year must be regarded as exceptional, nevertheless the accommodation at Kingseat Asylum is ample to meet the requirements of the district for some time to come.

THE LANCET.

LONDON: SATURDAY, JUNE 8, 1907.

The Metropolitan Hospital Sunday Fund.

TWELVE months have gone by since last we pressed the claims of the Metropolitan Hospital Sunday Fund upon the public to whom we address ourselves upon this annual occasion rather than to the narrower circle of our professional readers. Our supplement, published in last week's number of THE LANCET, has been issued and is doing its share, we venture to hope, in stimulating the generosity of subscribers and in producing a result worthy of the great cause for which we plead. To-day we can scarcely do more than reiterate with renewed earnestness that which we have said on other occasions, for it is not easy to find a fresh argument or a fresh ground of appeal where the features of the case presented by the advocate vary so little from those which have been dwelt upon already. Even the year that has passed since the Metropolitan Hospital Sunday Fund last held its collection, filled as it has been with events of political interest for the nation, and with incidents which may long be memorable to individuals as affecting their personal lives and fortunes, contains little to which we can refer in emphasising the need of the hospitals of London for loyal and ungrudging support. Their year's chronicle contains no events of sensational interest to arrest the glance of the passer-by; they have no story of startling achievement or of unusual success to which they can appeal, in order to unloose the purse-strings. For them the past twelve months have brought, as ever, merely 52 weeks of earnest, anxious, useful work in the cause of charity; weeks in which health has been restored to the suffering poor, in which pain has been relieved, and in which death has been averted; but although the aid which medicine and surgery bring through the medium of the hospitals into the homes of the helpless may mean renewal of life to its actual recipients, the world at large has little opportunity of estimating that which has been achieved. It has also no means of judging what restored health may mean when it is that of the wage-earner, toiling to support a family, or of the mother tending that family. Any alleged shortcoming on the part of a hospital can readily be noted and extensively advertised. When it is publicly stated that a patient has not been able to obtain admission to an institution already filled to overflowing and unable through lack of money to increase its accommodation, then, indeed, we see and hear plenty of unfavourable comment, but the comment is usually based upon a wholly false impression of the facts and takes no account of the lack of funds or of other causes arising out of poverty that impose limits upon the beneficence of all charitable institutions. Censure is more readily listened to than praise, and it is far easier to make known the possibly causeless complaint of an individual than to blazon abroad the everyday tale of duty performed with monotonous efficiency. If there be failures on the part of the hospitals of London to achieve perfection, such as there must be where human agencies are concerned, the promotion of sound organisation and economy is ever the care of the Metropolitan Hospital Sunday Fund, and the causes of failure could be for the most part removed by unloosing the public purse-strings.

If we are unable, however, to point to anything but a year of ordinary work on the part of the hospitals we do not for a moment suggest that the year has not been a period of progress on their part, and we feel that the sympathy of all should be with those who energetically do their daily duty of charity without vaunting their performances and with those who aid the gradual but sure advance of medical science without lending themselves to anything in the nature of dramatic display or of sensational advertisement. The greater number of those who live throughout the year in London and in the districts surrounding it, whether they be rich or poor, do so in order to earn their living, or to add to wealth already accumulated in London's countless trades and vast industries. It is with the captains of industry, mainly, that the power lies to maintain the income of the Metropolitan Hospital Sunday Fund at the high level which it has reached during past years, because into their hands flow during the year the proceeds of the mighty commerce of the greatest city of the world. At the same time we cannot ignore the fact that during the past 12 months a certain depression has been apparent, and that with many of those to whom we refer "times are bad," to use a popular phrase. With their anxieties we sympathise, but we would urge upon all, even though their financial circumstances may not be what they would wish them to be, and although the supply upon which they usually draw for the purposes of charity may be diminished, not to allow the hospitals to suffer thereby if any effort of self-denial can enable them to maintain their gifts to the Fund at their usual level. It is possible that some portion of their income may be usually divided between charity and pleasure. We would urge them in such a case to sacrifice their pleasures to some extent, rather than that charity should suffer loss; and in this we address ourselves not to those only whose revenues are large but to those whose yearly profits in their own estimations, or seen in the light of their ambitions, are but small. Let them think of those for whose sakes they are asked to give and remember that for them there can be no question of surplus when the week's wage is reckoned. Let them not forget those who in time of illness or injury would be helpless but for the aid given by the hospitals, those upon whose earnings from day to day their families depend for the supply of their daily needs. But although we may address ourselves first to that section of London's millions to whom London and London's suburbs represent home with all its associations or business with all its claims and emoluments, to the Londoners who should give for the benefit of their humbler fellow citizens, we do not forget the vast and wealthy crowd of those who flock to the metropolis in June in pursuit of pleasure before all other objects. The

season is at its height and within a small portion of the vast area of London are gathered men and women from every quarter, not of England alone but of the world, bent upon the enjoyment of the luxuries and the amusements that a great and wealthy city can supply. We doubt if the bad times to which we have referred with regret have greatly diminished the gaieties of the London season, and we would urge upon those who are filling with pleasant occupations every hour that they can spare from necessary rest not to forget their poorer brethren to whom no season brings recreation or leisure, and who, when they are overcome by accident or disease, must turn to the hospital as to the only friend who can save them from suffering and from death. We would press our appeal upon those who in the pursuit of pleasure visit our metropolis from foreign countries, asking them to remember how many of their humbler countrymen have made of London their temporary home in order to seek a livelihood in our teeming metropolis. Our hospitals close their doors to none on account of race or of religion; they seek no aid from the State or from the municipality, but from the charity of private individuals only; and we now ask those to whom such a system is new to consider what is meant by charitable institutions supported by the voluntary contributions of the benevolent, and to aid in a good work which cannot fail to win their admiration.

We are compelled to express the hope that those connected with London's commercial enterprises will make a special effort lest their annual contribution to the Metropolitan Hospital Sunday Fund falls below its usual level on account of circumstances to which we cannot shut our eyes—the fall in securities, and general feeling of unrest in the world of labour. We must also dwell briefly upon the loss which death has inflicted upon the hospitals and upon the Fund in the removal of their staunch and generous friend, Mr. GEORGE HERRING. No one has stepped forward to repeat his challenge of past years, under the terms of which he paid to the Fund a sum equal to one-fourth of that collected in the places of worship of the metropolis. Perhaps emulation of his princely generosity was not to be anticipated, but we must point out how much the hospitals will suffer by his death, in spite of the generous provisions of his will, unless an effort be made by those who survive him to increase their gifts. With many this should not be difficult, and there must be thousands of others having the means to give who in past years have afforded no support at all to the Fund, but who if urged by those having influence with them would, perhaps, give generously. We ask those who do not forget their own offering to use their influence to increase the gifts of others and to insure that they shall not remain ignorant of what "Hospital Sunday" implies. And with the suggestion that all should induce others to give in addition to contributing themselves we cannot but associate the name of one dear to ourselves. In the late Mr. WAKLEY, Senior Editor of this journal, as in Mr. HERRING, the Metropolitan Hospital Sunday Fund in the past 12 months has lost a true friend, and we point to the issue of our annual supplement year after year by him and under his supervision to show how fully he believed in the efficacy of persuasion exercised on behalf of charity and how practically he brought persuasion to bear where it might take effect.

Garden Suburbs and Garden Cities.

THE word "suburb," and still more the adjective "suburban," call up to the mind a picture of much that is commonplace, philistine, and even positively unlovely. Now suburbs, especially those of our provincial capitals, are often picturesque, and their inhabitants are in bulk as intellectual and as progressive as their fellows dwelling actually in the cities. But these facts are obscured by our recollections of the outskirts of many large towns with their long straggling lines of monotonous small houses, without form and without organic unity. We have often pointed out in THE LANCET that this mean and depressing environment is not essential to our town development, and have described with some detail the attempts now being made to show how the evils, practical as well as æsthetic, which characterise our suburbs no less than our large towns are due to the utter want of thought and system with which we allow our residential centres to develop. Given the opportunity of laying out some portion of the outskirts of a town upon a rationally conceived plan, many of the evils connected with housing would disappear of themselves. That there is no intrinsic difficulty in carrying this out is shown by the fact that this principle is already being acted upon at Hampstead where a few weeks ago "The Hampstead Garden Suburb" made its departure in town development, and where this week the foundation-stones of the first buildings were laid, as we report elsewhere. "The Hampstead Garden Suburb" is an estate of some 300 acres which has been bought by a company, the Hampstead Tenants' Society, and which is being held in trust for the community. Instead of allowing the speculative builder to erect upon the land as many small houses as municipal regulations will permit, employing an architectural style and a building standard that will allow of the maximum profit to the vendor of the houses, certain parts of the estate are ear-marked *ab initio* for gardens and open spaces, and these can never be built upon. In addition suitable sites for the schools, the bakery, washhouses, and shops have been decided upon before any building is begun. In this way symmetry can be secured as well as the requirements of hygiene. There will not be more than eight houses on the average to the acre of land held by the Hampstead Tenants' Society, so that the occupants will have adequate breathing space. By such systematic planning it is easy to preserve the natural features of special beauty of any building site, and treated in this way the environs of a large town may become not only health-giving but attractive to the eye and a source of pleasure and pride to the inhabitants who though not all of the same social class will be drawn together by a common and pleasant desire to live in a beautiful environment. For the aim of the garden suburb is to provide not for one class only but for many, so that while a large area may be devoted to workmen's cottages, other sites would commend themselves for the erection of larger houses. Most suburbs by providing for one class only add to the architectural uniformity a moral and intellectual monotony, and thus the segregation of classes which is so serious an evil of modern city life becomes still further accentuated.

On similar principles the Garden City at Letchworth is being developed and we make no excuse for returning to

discussion of the Letchworth experiment. It is one of great importance to the medical profession and its developments should be watched by our readers. The proceedings here are, of course, on a much larger scale than at Hampstead, for at Letchworth the estate purchased by the company was nearly 4000 acres and already in three years the population has increased from 300 to about 3000; there are some 400 houses upon the land and nine factories. At the outset about one-third of the whole area was set apart for building purposes, the remainder being designed to consist of gardens and open spaces within the city which will be surrounded by an agricultural belt like the rampart of a mediæval town. This agricultural belt will doubtless in the course of time be let for small holdings, the owners of which having thus a market at their very doors may be expected to find dairy farming a profitable undertaking. The essential point, however, is that the agricultural belt cannot be built upon, so that the ultimate size of the city is limited. That there is nothing chimerical in the idea is shown by the fact that this principle has been acted upon by such practical people as the Australians who have surrounded Adelaide with park lands in such a way that the town can only increase by making a sort of "knight's move" over these park lands. A similar method of treating the ring of land encircling a great city has been attempted in many American cities and in some instances the endeavour has met with great success. Both the Hampstead Tenants' Society and the managers of the Letchworth Garden City are paying special attention to the construction of workmen's dwellings, and it is hoped that the principle of a common kitchen and service for chambers may be introduced, if not actually among the cottages of workmen at least for that large class which can hardly afford to keep a servant and is yet incapable single-handed either of cooking satisfactorily or of providing for its household needs wisely. A plan with much to recommend it consists in building small houses round three sides of a quadrangle, the centre being occupied by a common kitchen and dining hall which might serve from 12 to 24 families. By paying a small sum towards the common kitchen a woman would not only be spared the trouble and worry of cooking the family dinner, but would be saved from the unnecessary expense which must always result where unskilled people engage in activities for which they are unfitted. We have recently called attention to the deplorable ignorance of the English women of the lower classes of the principles of domestic economy as applied to cooking, and division of labour is as applicable to domestic economy as to other things. The health of such colonies as those which we are considering must improve if one efficient cook is substituted for four bad ones.

All the schemes for garden cities and garden suburbs should interest the medical profession, for who realises more clearly than the medical man, whatever may be his sphere of practice, how much disease, poor health, and ineffective life are due to the bad housing conditions which prevail in our large towns? No one can be more alive than the medical practitioner to the far-reaching opportunities which here present themselves for making a fresh start in our urban life and so removing the various conditions which foster the growth and hasten the development of disease. More air and sunshine, larger open spaces, fewer houses to the acre, and greater amenities of city life, must surely all make for an improved level of health. Consequently, it is to be hoped that wherever kindred movements are on foot medical men will give them their heartiest support. One immediate way of assisting this very practical method of reform would be to join the Garden City Association (Central Office, 601, High Holborn, London, W.C.) which has sister associations in France, Germany, Belgium, and America, and with its branches at Liverpool, Manchester, Newcastle, and Glasgow advocates these principles throughout the length and breadth of the land and aids effectively in their actual carrying out. From this parent association have issued the two practical undertakings already mentioned and there are others in prospect. The Garden City at Letchworth by starting *de novo* with a well-thought-out plan shows how a modern town, instead of meriting RUSKIN'S description of it as a "congeries of bad building and ill living," may be an organic whole, neither defying the laws of æsthetics nor sinning against the rules of hygiene. The Hampstead Garden Surburb should indicate the lines on which existing towns can extend and develop in a sane and rational manner for the benefit of all.

An Inclement May: the Psycho-physical Aspect of Climate.

IT is a well-established fact, proved as well by common and shuddering observations as by the statistics of meteorologists, that these islands are more liable to suffer from east and north-east winds during the spring than at any other time of the year. May is more frequently the selected time than April, while in March, despite popular notions, the cold current is likely to be from the north or north-west rather than from the north-east and east. No one will deny that the May which has just finished its course was a disappointing as well as a very trying month, and an examination of the daily charts of weather published by the Meteorological Office makes it clear that the inclement condition was due to the wretched persistency with which the atmospheric pressure remained greatest over the Icelandic and Scandinavian region and lowest over the Spanish Peninsula, France, and Germany. This distribution of pressure is exactly the reverse to that obtaining over these parts of the earth's surface during the greater portion of the year and, of course, compels the air to flow from the Arctic north-east of Europe across the British Isles. There were certainly occasions during the month when a temporary displacement of the northern anticyclone and the near proximity of cyclonic systems to our west and south-west coasts brought about winds from milder quarters, enabling the thermometer to rise to the normal and for a brief period far above it, but these leniencies were few. At the commencement of the month the wind was westerly to south-westerly, and from the 7th to the 12th there was a southerly current that brought up very warm air from the Mediterranean region and raised the shade temperature to 79° F. in London and to 80°, even a little above it, in several parts of the home counties and in the north-east of England. There was also another short interval of warmth from the 23rd to the 25th, when the thermometer

rose to about 70° in the south-east as well as in some districts in the north and north-west of England. The wind as it blew over the metropolitan area during this period was sometimes from the eastward, but in reality the air-current then prevailing came from a more southerly point of the compass and was only deflected into east as it arrived on this side of the Channel. These summer-like interludes were very enjoyable but they only served to render the subsequent relapse to abnormal cold the more disagreeable and the more perilous. The worst spell of cold occurred about Whitsuntide; during three days the thermometer in London and over the greater part of the country failed to rise above 51°, and on the fourth day only touched 52°. As the average temperature for the afternoon during that period of the month is about 62° it will be seen that the universal complaints against the weather at the holiday period were veritably justified. In Scotland and the north of England the weather was even more consistently cold, the occasional warmth in the south only reaching those districts in a modified degree or failing to affect them altogether. But certain parts of Scotland were capriciously hot; on the 26th, for instance, the shaded thermometer at Lairg in Sutherlandshire ascended to the high point of 79°. Owing to the few warm spells and to the absence of any abnormal frosts the mean temperature for the month was not as a rule much below the average, but the sunshine was almost everywhere gravely deficient, while the quantity of rainfall was generally in excess over some parts of the north and north-east of Great Britain, the aggregates being more than double the average amount.

The reason why we, as a nation, invariably introduce conversation with a stranger, and not infrequently with a friend, by remarks upon the weather is, of course, that in our so variable climate the weather is actually of prime importance to our lives. We have just had placed before us an interesting pamphlet[1] which may be regarded in a sense as a plea for more exact talking about the weather, and as such we bring it to the notice of our readers. About three years ago we gave some account of the scheme by which Mr. W. F. TYLER of Shanghai proposed to make exact comparisons of climates and this pamphlet further develops his scheme. He says that in a general sense the term climate indicates the idea of varying degrees of physical comfort or discomfort resulting from the local meteorological conditions. In mild climates, among which, despite our recent experiences, he includes the climate of the British Isles, the means of describing the combined effects of local conditions is generally limited to calling the climate either "bracing" or "relaxing," as the case may be. In tropical or semi-tropical climates, such as those encountered in China, a means of describing the varying degrees of discomfort is practically non-existent. The weather may be called "muggy," but the degree of mugginess can only be denoted by various inexplicit adverbial adjuncts. There are, however, very strong grounds for suspecting that temperature and humidity are the most important of the conditions that go to make up "mugginess." These can, of course be measured by ordinary physical methods with considerable precision, and Mr. TYLER has endeavoured to show how the varying bodily sensations associated with changes in the weather may be numerically expressed. For the purposes of this investigation it appeared necessary to invent a word indicating the sensation caused by a "muggy" climate and the term selected is "hyther" (a "portmanteau" word coined from hydrothermos). The "hyther" scale has for its limits the numbers 0 and 10. Limit 10 represents the very worst day an observer remembered to have experienced in China—hot, damp, and enervating; while limit 0 represents an ideal summer day—warm, of course, but bright and bracing, so that a person suitably clothed and not exerting himself unreasonably or unseasonably suffers no discomfort from the climatic conditions. On each day of the month of August, 1902, at Shanghai, 12 individuals at noon estimated the degree of "hyther." They were all persons of normal condition, regular habits, and equable temperament. Instrumented meteorological observations for the purpose of comparing with the estimated "hyther" were obtained from the neighbouring Zicawei observatory. When the estimated "hyther" numbers and also the readings of the wet-bulb thermometer were plotted on squared paper a remarkable correspondence between the respective graphic curves was apparent, and Mr. Tyler found that the relation between the "hyther" numbers (h) and the wet-bulb readings (w) was approximately represented by the equation—

$$h = \frac{w - 66}{3}.$$

Mr. TYLER reinforced his observations on the production of a sensation scale, founded on the estimations of the temperature of water by persons who dipped their hands successively into water at 43° F., at 120° F., and at the temperature to be estimated, but for his interesting observations in this direction we refer our readers to his record of his work. We have referred to it in connexion with a brief consideration of the disagreeable May which we have just experienced because it suggests to us that the scientific study of weather is not sufficiently pursued among us. We are most of us content in our frequent allusions to the subject to employ any inaccurate terms which come into our mouths, because meteorology is not really studied by a sufficiently large number of persons to make the carelessness of our phraseology noticeable.

[1] The Psycho-Physical Aspect of Climate with a Theory concerning Intensities of Sensation, by W. F. Tyler, F.R. Met. Soc., Assoc. Inst. C.E. Reprinted by permission from the Journal of Tropical Medicine and Hygiene, April 15th, 1907. London: John Bale, Sons, and Danielsson, Limited. Pp. 45 and four folding plates. Price 5s.

Annotations.

"Ne quid nimis."

THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

AT a meeting of medical men, biologists, and others interested in tropical diseases, which was held in London on May 10th, the Society of Tropical Medicine and Hygiene was duly constituted. Laws for the government and administration of the society were at the same time considered and passed and the first council was elected. The formation of a society to promote the study of the diseases of warm climates and to facilitate intercourse and discussion among

those who pay special attention to this branch of medicine has long been desirable, but its inception on a sufficiently broad basis has only recently been found to be practicable. That end has, however, now been attained, the success of the movement having in a great measure been due to the approval and coöperation which it has received from the Schools of Tropical Medicine in London and Liverpool, from the Universities and other teaching bodies, from the Naval and Military Medical Services, and from the large and rapidly increasing number of physicians who are engaged in mission work and in the practice of medicine and hygiene in tropical countries. An interesting and important feature in connexion with the society is the active support which has been accorded to it by many eminent biologists, the value of whose assistance in their own field of research—by no means the least important department of tropical medicine—will not readily be overestimated. The acceptance of seats on the first council, by representatives of these various services, institutions, and interests, furnishes an effective guarantee as to the extent of the sphere of activity and as to the energetic and capable administration of the society. All registered medical men and others who are interested in the sciences related to tropical medicine are eligible for election as Fellows; and the council is empowered, for a period of six months, to elect without ballot, on application being made and on its being satisfied as to the eligibility of the candidates, a limited number of original Fellows. The annual subscription is one guinea, there being at present no entrance fee. The headquarters of the society have been established at 20, Hanover-square, London, W., where ordinary meetings will be held at 8 30 P.M. on the second Wednesday of every month except August and September. The first meeting of the society is fixed to take place on Wednesday, June 26th, at 8.30 P.M., when it is expected that the President, Sir Patrick Manson, will deliver an inaugural address, and objects of interest in tropical medicine will be exhibited. The first council of the society is as follows:—President: Sir Patrick Manson. Vice-President: Professor Ronald Ross. Treasurer: Dr. W. Hartigan, 4, Bond-court, Walbrook, E.C. Secretaries: Dr. F. M. Sandwith, 31, Cavendish-square, W., and Dr. W. Carnegie Brown, 32, Harley-street, W. Councillors: Mr. Ernest E. Austen, Fleet-Surgeon P. W. Bassett-Smith, R.N., Mr. James Cantlie, Dr. C. W. Daniels, Lieutenant-Colonel G. M. J. Giles, I.M.S., Mr. W. M. Haffkine, Dr. C. F. Harford, Dr. T. S. Kerr, Dr. G. C. Low, Professor E. A. Minchin, Lieutenant-Colonel C. H. Melville, R.A.M.C., Professor G. H. F. Nuttall, Dr. L. W. Sambon, Mr. Arthur E. Shipley, Dr. J. W. W. Stephens, and Mr. Fred. V. Theobald.

THE PUBLIC ATTITUDE TOWARDS CONSUMPTIVES.

UNDER the heading of "Panic and Prejudice" Mr. W. K. McClure, writing in the *Westminster Gazette* has drawn attention to the growing tendency among a considerable section of the public to treat the sufferer from pulmonary tuberculosis almost as an outcast, or, at any rate, as one to be shunned from fear of infection. He very cogently and rightly points out that a wider recognition of the simple fact that infection is chiefly conveyed by careless expectoration would "do far more to prevent the spread of consumption than the callous ignorance which brands all consumptives as outcasts." The knowledge of the communicability of consumption from person to person so long disputed, but now so universally recognised, has resulted in a widespread misconception as to the mode of infection, in virtue of which no little hardship is inflicted upon the unfortunate sufferers from that disease. An instance of this is brought forward by Mr. McClure. He points out that the fear of infection has so taken hold of many people's minds that the warm health resorts of Southern Europe and Northern Africa are practically barred to those suffering from pulmonary tuberculosis. Mentone led the way in excluding them; some years ago the proprietors of first-class hotels agreed among themselves to refuse to receive guests known to be suffering from consumption on the supposition that their presence hindered the development of Mentone as a pleasure resort. Since then a similar action has almost been forced upon the hotel proprietors in other parts of the Riviera, so that practically consumptives can only visit these places when they conceal the nature of their illness. Mr. McClure states that inquiries were made in the autumn of 1905 and again last autumn at the principal hotels at every resort from Hyères to Rapallo as to whether consumptives were received, the reply in almost every instance being an uncompromising negative. One of the answers was a striking testimony to the reason underlying these refusals, for the hotel proprietor replied that many of the visitors to his hotel made it a condition that no one suffering from disease of the lungs should be taken as a guest. As Mr. McClure points out, "the pleasure seekers have made up their minds that consumptives must either remain in sanatoria in their own country, or if they come abroad go straight to the Davos valley and stay there." This attitude towards the unfortunate sufferer which Mr. McClure so rightly and so strongly deprecates is one with which the medical practitioner is very familiar. He is frequently asked whether it is not dangerous to retain the services of a tuberculous person, or, if he be attached to a hospital, often hears that the consumptive has been discharged from his employment owing to the fear of infection. Instances could easily be multiplied showing the growing tendency to treat the consumptive like the leper or to regard him as a pariah to be avoided in every way possible. Mr. McClure's thoughtful article deserves to be read widely. It cannot be too generally known that practically the only means of conveying the infection from one person to another is from the drying of sputum and its dissemination as dust containing tubercle bacilli, if we except intimate personal contact, such as kissing or occupying the same bed. Further, that given the most simple precautions in regard to the disposal of his sputum by the consumptive, the danger of infection is almost non-existent. The public have obviously a right to expect that such precautions shall be rigidly carried out, and in return it is their duty to treat the sufferer with the consideration and the sympathy which he deserves and not to increase his sufferings further by branding him as dangerous and to be avoided.

"LOATHSOME BED STUFFING."

OUR attitude on the above subject, as explained in several articles in recent numbers of THE LANCET, continues to attract the attention of the trade and it is gratifying to us to find so many representatives of the bed-furnishing industry giving hearty support to our views. We have consistently urged that the evil can be suppressed by a simple system of inspection of the factories where bed stuffing is made and handled. We are convinced that no respectable firm would resent this plan should it become part of a Government scheme for preventing this scandal. On the contrary, the great furnishing houses, we feel sure, would welcome such an innovation and the plan of control could be conducted without needlessly submitting their business to inconvenience. This, at any rate, is the opinion of one great furnishing house—namely, Messrs. Maple and Co. We understand from the representations made to us by this firm that the root of the mischief is simply and solely the disgusting policy of raking up the cheapest possible raw material. Any offensive rags, left off clothes, and so on, can

be torn to shreds and converted into flock by the machine appropriately known as "the devil." The resulting mass, of course, should be thoroughly washed and scoured but that process obviously makes it more costly and so sanitary procedure is ignored and all sorts of abominations are mercilessly stuffed into the mattress. By the courtesy of Messrs. Maple and Co. we had the opportunity of inspecting their bedding factories and of watching the processes or series of processes which bed stuffing of varying qualities goes through before it is considered fit for the purpose of stuffing mattresses. The raw material comprises hair, feathers, torn up carpets, rags, and so forth, all of which are carefully submitted not only to a cleaning process but also to a dust-extracting process also. During the teasing out of this material the operation is conducted within the field of an exhaust fan or cyclone, so that all irritating and easily scattered dust is effectually removed. Is it unreasonable to demand that all raw material destined ultimately to be used for filling bedding should be treated on the scrupulous sanitary lines indicated? We not only think not but maintain that some form of Government machinery should enforce such treatment.

THE SULPHUR FIEND.

THE smoke nuisance is not only a menace to health but threatens also to destroy our buildings. Even if scientific skill and energy, bearing in mind also economic considerations, are able to suppress the visibility or opacity of smoke, a quality which shuts out health-giving light rays, it still remains to eliminate the products of combustion of the sulphur which is contained in more or less quantity in all ordinary coal. It is bad enough to have the daylight screened from us by a pall of dense smoke and vapour, but it is probably worse when that atmosphere is charged, as it invariably is, with sulphurous and sulphuric acids, both irritating to a degree and destructive to many of London's interesting buildings. We are inclined to the view that after all the sulphurous outpourings of London's chimneys are more responsible for the ill-effects of fog than is any other factor. It must be remembered that during a fog there is practically no movement of the air of that kind which is calculated to attenuate or to remove these outpourings, and it has been estimated that quite, if not more than, half a million tons of sulphuric acid are emitted annually in London from the coal burnt in our fireplaces. The air is thus regularly reinforced with a corrosive chemical ready to do mischief to our throats and lungs and alike to the structure of our buildings. Limestone is converted into gypsum or sulphate of lime, a substance which is more voluminous than the native material and which readily powders and detaches itself, playing havoc with delicate mouldings and tracery. St. Paul's Cathedral and the Houses of Parliament are victims of the sulphur fiend. The rain descends and by the time when it reaches the buildings it has become a weak but nevertheless destructive solution of sulphuric acid. The surfaces are thus exposed year in and year out to a more or less continuous stream of acid washings. This is no case for palliative measures or a remedy but one calling absolutely for prevention. It is, however, of interest to mention one idea in regard to a remedy which so far has met with most pleasing success when applied to surfaces which have already been attacked. A solution of baryta appears to have the property of re-cementing together the particles of the decayed stonework and it is assumed that it acts by forming with the gypsum insoluble sulphate of barium, at the same time liberating lime which sooner or later becomes converted into carbonate, the substance of the original limestone, by absorbing the carbonic acid gas of the air. Professor A. H. Church gives an example of the success of this treatment in the case of the Chapter House at Westminster. "Before treatment a touch of the finger sufficed to bring away the surface of the carving; afterwards the stone was as sound as that newly quarried and harder." This sounds satisfactory enough but obviously it would be still more satisfactory if the destructive agent was never allowed to exercise its corrosive property, or, in fact, to have any existence at all. There can be no objection to washing the surfaces of buildings with baryta water but that does not solve the question of the injurious action of sulphuric acid on the health of man and of plants. We may cover our buildings, as has been suggested, with a veneer of impermeable or protective wax and thus preserve them from the inroads of sulphuric acid in the air but we still leave our respiratory tract open to the irritating action of "the London particular." We cannot wax our throats, our eyes, or our noses.

THE ADMINISTRATION OF ETHER BY THE DROP METHOD.

IN the *Maryland Medical Journal* for May Dr. S. G. Davis strongly advocates the administration of ether by the drop method which is adopted in St. Mary's Hospital, Rochester, and in several other American hospitals. It certainly possesses the great merit of simplicity. Dr. Davis places a piece of rubber protective over the patient's eyes to shield them from the vapour of the ether. Since he began to do this he has not had a single case of conjunctivitis due to ether. The face is protected with a moist towel or gauze which extends over the rubber tissue and around the chin. The inhaler consists of a wire frame like that of Esmarch's chloroform inhaler but larger, in order to give more space for mixture of air and ether. The air space under the frame should contain about 25 cubic inches—i.e., be about thrice that of Esmarch's chloroform inhaler. The frame is curved so as to fit the face closely. It may be covered with one or two layers of stockinette or with several layers of gauze. The best covering is about six layers of ordinary gauze which can be quickly applied and thrown away when done with. The frame should be boiled after use. The inhaler is applied over the face and the ether is administered drop by drop, very slowly at first, then gradually more rapidly as the patient is able to take stronger vapour. Finally, at about the time when he will not respond to questions, a moist towel or some gauze is wrapped snugly round the mask, leaving a small area in the centre for the free passage of air through the gauze. Thus the air is prevented from passing under the edges of the inhaler and is made to pass through the ether-laden gauze. The ether should not be dropped on more quickly than the patient can comfortably breathe it. Dr. Davis lays great stress on slow administration and advises the anæsthetist never to be in a hurry to produce unconsciousness and not to let the operator hurry or worry him. The patient, it is stated, will become unconscious in two or three minutes and will be ready for operation in about ten minutes. After complete anæsthesia is induced very little ether, dropped slowly but continuously, will suffice to maintain the proper degree of narcosis. The further duties of the anæsthetist consist in watching the respiration, pulse, pupils, and general condition, and in not allowing respiratory paralysis to be induced. The respiration should be quiet, with perhaps a slight snore. Panting and rapid, irregular, or stertorous breathing indicate that the patient needs more air. The pulse should be regular, full, and bounding. The pupils should be of normal size and quickly respond to light. Since adopting this method Dr. Davis has abandoned the chloroform-ether sequence, as he found that it presented no advantage over the simple administration of ether. Another advantage of the drop method which is

claimed is that vomiting is much diminished by its use. This method has been extensively employed in Europe but has few advocates in Great Britain. Dumont's ether mask is practically identical with that described by Dr. Davis and has been employed in Berne and elsewhere in Switzerland. The plan is wasteful both in the matter of time and material and does not appear to offer any advantages over the nitrous-oxide-ether method introduced by Clover. It is, perhaps, easier for the advice to be given that the anæsthetist should not allow himself to be "hurried" or "worried" by the operator than it is for it to be taken. In busy hospital practice the loss of ten minutes for every period of induction means a serious leakage of time when six or eight operations have to be performed in an afternoon.

WELL DESERVED HONOURS.

THE University of Oxford at a Convocation held on May 28th conferred the honorary degree of M.D. upon Mr. Wilfred Thomason Grenfell, L.R.C.P. Lond., M.R.C.S. Eng. The honour was given in recognition of the good work carried out among the fisherfolk of Labrador under Dr. Grenfell's supervision. Dr. Grenfell, who was educated at Queen's College, Oxford, and at the London Hospital, qualified in 1888 and joined the Royal National Mission to Deep Sea Fishermen in 1889. At first he worked on board the mission vessels in the North Sea but in 1892 he initiated work of a similar kind among the fishermen in Labrador where, having obtained his certificate as a master mariner, he commanded his own vessel. In Labrador and Newfoundland he has helped in establishing four hospitals, besides various coöperative stores and other institutions for the good of the inhabitants. Sundry most interesting articles from his pen have recently appeared in the columns of our contemporary the *Standard*, which give a vivid account of the hardships of a medical missionary, as well as of the benefits which his skill and knowledge can confer. We congratulate Dr. Grenfell upon the compliment paid to him by his University—a compliment which is all the more noteworthy inasmuch as it is the first occasion upon which the honorary degree of Doctor of Medicine has been conferred. On May 31st Dr. Grenfell was the recipient of another honour, for he was invested by His Majesty the King with the insignia of a Companion of the Most Distinguished Order of St. Michael and St. George.

WIDAL'S REACTION IN JAUNDICE.

SOON after the discovery of the Widal reaction in typhoid fever it was noticed that the serum of certain persons not suffering from the disease agglutinated typhoid bacilli. This was observed particularly in jaundice. But in most cases a reaction was obtained only in low dilutions and after long periods (from two to eight hours). Judged by the usual standards of the present time such reactions would not be regarded as positive and as any evidence in favour of the diagnosis of typhoid fever. But there remains a small group of cases of jaundice in which the serum possesses high agglutinative properties. In the *Boston Medical and Surgical Journal* of April 25th Dr. H. A. Christian has contributed an important paper on the subject. He reports the following case. A man, aged 42 years, was admitted into hospital on Nov. 6th, 1906. Five weeks before he was awakened from sleep by severe pain in the right hypochondrium. Frequent attacks of pain followed and jaundice, with clay-coloured stools and dark urine, developed. On admission there were deep jaundice and marked tenderness and slight rigidity and spasm in the region of the gall-bladder. The patient had suffered from typhoid fever seven years previously. The blood serum agglutinated the typhoid bacillus in a dilution of 1 in 50 in 20 minutes. On the 10th choledochotomy was performed and a stone was removed from the common duct. The patient did well for a time but gradually failed and died on Dec. 9th. The stone was two centimetres in diameter, slightly irregular, semi-translucent, and crystalline. Cultures made from the almost colourless fluid in the gall-bladder and from the centre of the stone showed the typhoid bacillus. At the necropsy no typhoid lesions were found in the intestine. The gall-bladder was contracted and thickened. The bile-ducts seemed normal and contained no calculi. A positive agglutinative reaction in jaundice may be explained as due to the action of biliary substances dissolved in the serum. But there is much evidence against this view. The reaction cannot be obtained in many cases in which the jaundice is deeper than in those in which the reaction is present. Normal serum to which bile has been added does not give the reaction. Analysis of the reported cases of jaundice with an agglutinative reaction as high as a dilution of 1 in 50 in 30 minutes shows that they be divided into several classes: (1) those with a history of an attack of typhoid fever; (2) those in which typhoid bacilli are found in the biliary tract; (3) those in which there is acute infectious jaundice; and (4) those not belonging to any of the preceding classes. The fact that the agglutination reaction persists for some time after typhoid fever explains the first class. When the fever much antedates the jaundice the inference is that the bacillus persists in the system. The case recorded above is an example. A case has been recorded by Droba in which the bacillus was isolated from the gall-bladder 17 years after an attack of typhoid fever. With regard to the second class, several cases of cholelithiasis have been reported with no history of typhoid fever in which the typhoid bacillus has been found in the biliary tract. The third class includes the condition known as "Weil's disease" and others which may be examples of atypical typhoid fever. With regard to the fourth class, it has been shown that even in the absence of a history of typhoid fever a person may harbour the typhoid bacillus. The reason for the frequent association of jaundice with the agglutinating reaction is the fact that the gall-bladder is a site of election of the typhoid bacillus which often persists there long after an attack of typhoid fever, possibly producing cholecystitis and cholelithiasis.

THE BICENTENARY OF LINNÆUS.

THE bicentenary of Linnæus, celebrated by the Royal University of Upsala on May 23rd (May 13th, O.S.), has been the occasion of some graceful tributes to the memory of the great Swedish naturalist. Notable among these are the addresses forwarded to Upsala by the trustees of the British Museum and the director of the British Museum of Natural History. Professor Edwin Ray Lankester makes a happy allusion in the opening sentences of his address to the visit of Linnæus to this country in 1736. "There is preserved in the British Museum a letter from the celebrated Boerhaave introducing to our founder, Sir Hans Sloane, a young Swedish friend. 'Linnæus,' the letter runs, 'Linnæus qui has tibi dabit literas est unice dignus te videre, unice dignus a te videri; qui vos videbit simul, videbit hominum par, cui simile vix dabit orbis.'" Despite this excessive compliment, or because of it, Sloane is said to have given the young man of genius a cold reception, little divining what a valuable connexion would in future exist between the learned of England and of Sweden. "Upon the material foundation of Sloane," to quote the address further, "have arisen the vast collections of the British Museum; from the genius of Linnæus have branched out the sciences of descriptive botany and zoology, enabling us to reduce to order these ever-growing collections. And throughout this growth there have ever been conspicuous the cordial intercourse and mutual aid between the naturalists of our two countries, initiated when Linnæus visited this 'punctum saliens in vitello orbis."

Linnæus is of course best remembered as a botanist and zoologist, the originator of the nomenclature named after him, but he was also much more. In the first place, he was eminent as a biologist: "he found biology a chaos, he left it a cosmos." Then, too, he was a traveller interested in folk-lore, and wrote an admirable book about the Lapps, among whom he journeyed for thousands of miles. Nor did he cut a mean figure as a practising physician. Indeed, his earlier associations are chiefly medical, and Stobæus, an eminent physician, was one of his kindliest patrons. There is much in the early struggles of Linnæus, his vivid character, his brilliant powers of observation, his passionate pursuit of science, and his enormous originality that reminds us of John Hunter. Both men were destined to conventional pursuits and were threatened with apprenticeship to mechanics. Indeed, Hunter was for a time a cabinet-maker. Both men early escaped by sheer force of genius from the influence of their environment, achieved an infinity of original work, and at length became shining stars in the firmament of time.

MR. BALFOUR AND POST-GRADUATE STUDY.

THE meeting of the Federal Conference on Education, which was held on May 31st, was occupied with a discussion upon universities and was remarkable in many ways. The views which were expressed as to the real function of a university, of the importance of post-graduate study, and of the necessity for interchange and reciprocity among universities were not new, for in point of fact they were a recurrence to mediævalism. But they were revivals. Chief among the many excellent speeches was, perhaps, that delivered by Mr. Balfour, which dealt mainly with the importance of post-graduate study. After a protest against the tyranny of examinations, he continued:—

"But, at all events, let us rejoice in common that there is one branch of university work, of growing interest and importance, daily receiving more recognition from all that is best in the intellectual life of the country—I mean the post-graduate course. There the slavery of examinations is a thing of the past, the intellectual servitude in which the pupil has hitherto been is a thing he may put on one side; and he is in the happy position of being able to interrogate nature and to study history with the view of carrying out his own line of investigation and research, instead of being in a perpetual subservience to the idea whether such and such a subject is worth getting up for examination purposes, whether he may not have omitted to read with sufficient attention something which to him is perfectly useless, perfectly barren, perfectly uninteresting, but on which some question may be asked by a too curious examiner."

And further, he added that it was in connexion with the post-graduate course that there could be a communication between ourselves at home and the more distant parts of the Empire. "If," he said,

"we can so arrange the post-graduate course of our universities that it will be thought a normal and natural thing for any man who has the talent and the time to devote his life to investigation, first, to get his education at one of the universities of his own country, and then to go and conclude that education in a post-graduate course in one of our colonies, how great will be the advantage, not merely to the student, but to the communities which will be brought together by a tie which may unite us all in a common interest in these higher subjects."

This is a noble ideal—one, moreover, which there should be no great difficulty in making a reality. In the Middle Ages the universities of Europe were free to all duly authorised scholars, and in many instances the teachers of one university were free to teach in any other university. In those days the curse of Babel was removed by the universal knowledge of Latin as a language common to learning. If this is so no longer, there exists for British students a number of universities in far distant lands where their own tongue is spoken, and in addition to the countries under the British Empire there is that great country allied to ourselves—namely, the United States of America. From our own particular point of view how much benefit would arise to humanity in general from the labours of a band of earnest students who could study the diseases of tropical climates in the universities of those lands where such diseases are prevalent. Much has already been done in this matter, but much also remains to be done. It is of good omen that the conference unanimously carried the following motion:—

That it is desirable that a committee representing universities should be formed which should investigate the question whether it is possible to facilitate the exchange of information as to their courses and standards between the universities of the empire, and to take action accordingly.

We hope that this is but a prelude to an interchange of students and teachers among the universities of the empire.

PEPTIC ULCER FOLLOWING GASTRO-ENTEROSTOMY.

IN the *Cleveland Medical Journal* for May Dr. C. A. Hamann has reported a case of peptic ulcer of the jejunum following gastro-enterostomy, a lesion which has only recently attracted attention. A man, aged 48 years, suffered for some time from symptoms of gastric ulcer—pain, tenderness, emaciation, hæmatemesis, and hyperchlorhydria. Anterior gastro-enterostomy and entero-enterostomy were performed. The Murphy button was used in both anastomoses. Recovery from the operation was uninterrupted and the smaller button was passed, but on the twenty-second day epigastric pain began. An indistinct tender mass was felt in the epigastric and left hypochondriac regions. The patient was allowed to go home as his condition was not regarded as serious. He died rather suddenly 26 days after operation. The necropsy showed on the anterior wall of the jejunum just beyond its junction with the stomach a perforated ulcer about an inch in diameter with a sharply marked border. The button was *in situ* but the perfect nature of the union and the position of the ulcer showed that the button could not have caused the ulcer by pressure. The ulcer was exactly in the position where the highly acid gastric juice would come into contact with the intestinal mucosa. The gastric mucosa showed erosions but no round ulcer. There was also general peritonitis. The operation of gastro-enterostomy was introduced in 1882 but not until 1899, 17 years later, was the first case of peptic ulcer following it reported by Braun. In an extensive review of the subject Gosset collected 31 cases, mostly German.[1] Of these 29 occurred in males—a preponderance in striking contrast to the greater frequency of gastric ulcer in females. The ulcer occurred most often after anterior gastro-enterostomy (15 cases out of 27). It occurred once after Roux's operation, four times after anterior gastro-enterostomy with entero-anastomosis, six times after posterior gastro-enterostomy, and once after this operation with entero-anastomosis. But it must be remembered that the anterior operation has been performed more often than the posterior, at any rate in Germany, where most of the cases have been recorded. Mr. A. W. Mayo Robson has pointed out that many cases must have been unrecognised because perforation did not occur and that in many others death must have resulted from abscess formation or in other ways, the adhesions and other complications obscuring the parts, so that at the necropsy the true nature of the affection was not ascertained. The time after operation at which symptoms of ulceration appeared varied from seven hours to ten years. Ten of the cases were fatal, 19 terminated in recovery, and in the remaining two the result is not stated. In all the operation was performed for benign disease. Of 14 cases in which the method of operation is stated suturing was performed in nine, the Murphy button was used in four, and a bone bobbin in one. In 17 out of 21 cases there was hyperchlorhydria. In consequence of the apparent relation between hyperchlorhydria and post-operative ulcer the administration of sodium bicarbonate after operation has been recommended. Most, if not all, the ulcers have occurred in the jejunum. The duodenum seems

[1] Revue de Chirurgie, January and February, 1906.

more resistant to the gastric juice, no doubt because it is accustomed to it. The morbid anatomy of these ulcers is the same as that of peptic ulcer of the stomach or duodenum; they are almost always single. The symptoms resemble those of the gastric ulcer. There may be none until perforation takes place; this occurred in eight of the 31 cases. In 20 of the remaining cases there were signs of adhesive peritonitis—the anterior abdominal wall was infiltrated and an indistinct mass was felt.

THE COMPULSORY RETIREMENT OF POSTAL MEDICAL OFFICERS UNDER AN AGE LIMIT.

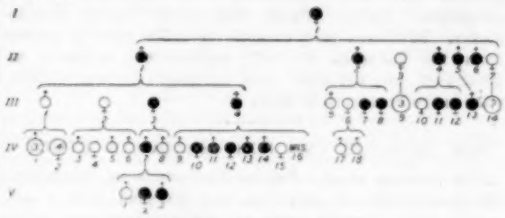
WE are informed that the Postmaster-General has intimated to the Association of British Postal Medical Officers that he "recognises that on the first introduction of a new practice as regards medical officers over 70 some inconvenience may have been caused in particular cases, and if there are instances in which hardship could be shown and at the same time the officer is fully efficient Mr. Buxton would be prepared to consider whether the date of retirement might be postponed for a time." Any postal medical officer desirous of availing himself of this offer would do well to communicate immediately with Dr. R. R Giddings, 206, Mansfield-road, Nottingham, the honorary general secretary of the Association of British Postal Medical Officers.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual election of members of Council of the College will be held on Thursday, July 4th next, at 3 P.M. There will be four vacancies caused by the retirement in rotation of Sir John Tweedy, Mr. Herbert William Page, Mr. Charles William Mansell Moullin, and Mr. Frederic Samuel Eve. We understand that Sir John Tweedy does not intend to offer himself for re-election, but the three other retiring members will again become candidates. The names of several other Fellows have been mentioned as likely to be candidates, among others those of Mr. W. Bruce Clarke, Mr. Charles Higgens, Mr. Charters J. Symonds, and Mr. W. Dunnett [Spanton (Hanley), but we hope to give the complete list next week. All nominations must reach the secretary by Monday, June 10th, at the latest. It will be noticed that the hour of meeting has been put later than on previous occasions; this has been done to facilitate the attendance of Fellows, six of whom unconnected with the Council must be present before the commencement of the proceedings. Personal attendance, however, is not essential for the exercise of the privilege of voting, for a voting paper will be sent to every Fellow in the United Kingdom whose address is known to the secretary.

HEREDITARY MAL-DEVELOPMENT OF ENAMEL.

A VALUABLE series of cases illustrating hereditary maldevelopment of enamel is recorded in the March issue of the Transactions of the Odontological Society. The defect consisted in a stunted development of certain teeth accompanied by a deficiency in the amount of the enamel, the number of teeth affected varying in different members of the family. In all the cases the earlier formed teeth suffered most—namely, the incisors and the first molars, and following these the canines, premolars, and second molars in the order named. In all the cases the third molars, when present, showed a full covering of enamel. On the lower incisors no enamel was found in any case, but some of the upper incisors showed a narrow ring of enamel at the alveolar edge. The eruption and order of succession of the teeth showed no marked irregularity and no trace of tubercle, syphilis, or gout was found, all members of the family being well formed and strong. Lesions of the eye, skin, nails, and hair were absent with the exception of one male, whose vision was corrected with + 1 D. sph. Mr. J. G. Turner was unable to find any explanation of the condition, the lesion, he considered, being a want of energy which allowed cell production to proceed but which inhibited the actual enamel formation and so limited the growth of the enamel organ. An analysis of the particulars given showed that every member married an unaffected stranger and that the defect was transmitted only by abnormals, never by normals, five separate families showing this latter point; males and females were affected, the proportion of abnormals to normals being nearly 2 to 1. The series is interesting to those engaged in the study of heredity and disease. The pedigree of the family is as follows:—



● indicates an affected person.
○ indicates an unaffected person.

A large circle with a number inside indicates a child; where sex is known it is added.

THE BACTERICIDAL PROPERTIES OF TEARS.

OUR Copenhagen correspondent has recently[1] drawn attention to a work by Dr. C. Lindahl on the bactericidal properties of tears. The subject is one which has been submitted to a considerable amount of investigation with contradictory results. Dr. Lindahl finds that the bactericidal properties are abolished by heat and are hence attributable not to the inorganic constituents of the fluid but to organic constituents and leucocytes. Such a view is *a priori* the more probable but the diametrically opposite results obtained by Bach have to be taken into consideration. Bernheim, Marthen, and others agree that the lacrymal secretion has a deleterious effect upon the growth of staphylococcus aureus but Ahlstroem, de Bono and Frisco, and others failed to confirm this result. Helleberg found that the slight effect observed with staphylococcus aureus was abolished by heating to 58° C. and attributed it to alexins. Van Genderen failed to find any bactericidal effect with bacterium coli, and de Bono and Frisco with typhoid, cholera, and diphtheria bacilli, though the virulence of staphylococcus aureus and the diphtheria bacillus was diminished. Römer found that anthrax bacilli kept for eight days in the conjunctival sac, the lids having been sewn together, were still living and virulent. It will be seen, therefore, that the evidence is conflicting and we are only justified at present in asserting that the lacrymal secretion is a bad culture medium for bacteria. A cognate question which has received some attention is the presence or absence of the products of immunisation in tears. Here, again, the evidence is conflicting, though generally in the negative. As regards diphtheria antitoxin, Gosetti and Jona and de Bono and Frisco obtained positive results but these were not confirmed by the researches of Coppez and Demaria. Rymowicz failed to find agglutinins in the tears of dogs immunised against typhoid fever and cholera but Schulz, Dieulafoy, Widal, and Siccard obtained a positive Widal reaction in typhoid fever patients. Another problem nearly allied to the foregoing is the question of the elimination of toxins by the ocular fluids and attention has been drawn to

[1] THE LANCET, May 25th, 1907, p. 1463.

it in the same number of THE LANCET by our Paris correspondent. Dr. Bouchard of Limoges reports four cases of irido-keratitis in women with irregular menstruation which cleared up only when the menstrual functions became normal. We have recently referred to the same matter in our review of Berger and Loewy's Diseases of the Eye of Sexual Origin in Women.[2] The association of irido-cyclitis with pyorrhœa alveolaris must be regarded as beyond dispute and is explained with greatest probability on the theory of the elimination of toxins with the intraocular lymph by the ciliary processes. If this be true it is likely that toxins of other origin are similarly excreted and in the absence of oral sepsis and disorders of the generative system the most probable site is the gastro-intestinal tract. We are not aware that any observations upon the opsonic reactions of patients with irido-cyclitis have yet been carried out. It is not unlikely that a subnormal index for bacterium coli might be found in some of these cases.

EPIDEMIC CEREBRO-SPINAL FEVER.

STATISTICS recently published by the medical officer of health of Glasgow show that in that city up to March 31st there had been a total of 312 cases of epidemic cerebro-spinal fever treated in hospital to a termination, and that among them there had been 230 deaths, giving a death-rate of 73·7 per cent. Of the total number of cases, 175 were verified bacterially, and the deaths numbered 145, a rate of 82·9 per cent.; 137 were not bacterially verified, but on clinical grounds were regarded as cerebro-spinal fever, and of these 85 died, giving a rate of 62·0 per cent. The outbreak consisted mostly of single cases in separate households distributed over a wide area. It occurred chiefly in children who were related to each other with regard to the date of sickening but had, as a rule, no common centre of infection which was discoverable. Discussing possibilities of infection he suggests that the prevalent habit of kissing children may be one method by which the organism is transferred to them from "carrier" cases. In Scotland during the week ended June 1st there were 17 deaths from this cause registered in Glasgow, two in Leith, and one in Edinburgh. In Glasgow the weekly report issued on May 31st showed that there were at that time 110 cases under treatment. In the quarterly summary of the births and deaths in the principal urban districts in Ireland special tables dealing with this subject have been inserted. During the 13 weeks ended Saturday, March 30th, there were 13 deaths from this cause recorded in the Dublin registration area. In Belfast during the same period 233 cases were notified and there were 154 deaths, 90 of males and 64 of females, deaths of persons admitted from without the county borough being excluded. The first of the 13 weeks of the quarter ended on Saturday, Jan. 5th; the progress of the epidemic in Belfast is marked by the number of deaths during each of these weeks, the successive numbers being two, one, one, two, 12, 14, 12, 12, 22, 22, 19, 14, and 21. The deaths at various ages were as follows: under one year, 12 males and seven females; one year and under five years, 33 males and 12 females; five years and under 20, 34 males and 37 females; 20 years and under 40, 14 males and four females; and 40 years and under 60, one male. Almost all the deceased belonged to the labouring, artisan, or lower middle classes; one was the infant child of a "medical doctor," one was a medical student, and one was a school teacher. As regards duration of the illness, 117 of the 154 patients died in less than seven days, the periods being as follows: under 24 hours, 35 cases; one day, 24 cases; two days, ten cases; three days, 19 cases; four days, eight cases; five days, 13 cases; and six days, eight cases. In Belfast during the week ended June 1st 14 deaths were registered.

[2] THE LANCET, April 27th, 1907, p. 1166.

EPSOM COLLEGE.

A COPY of the voting paper for the election of pensioners and foundation scholars in connexion with the Epsom College Foundation has reached us, and we notice with regret that the percentage of cases where the husband or father of the candidate has supported the institution in his better days is still very small. In but two instances out of the 16 applications for pensionerships has such support been given and in only seven out of the 33 applications for foundation scholarships; we note that four of these are recommended by the selection committee as being in its opinion the most urgent cases. Another point worthy of attention is the fact that candidates reside in various parts of the British Isles. At times the foundation is referred to as a "South of England charity" by those who are not familiar with the scope of its work, and the addresses of candidates on this voting paper are the best refutation of such a statement. There are several applicants in Scotland, Ireland, Yorkshire, and Lancashire—in fact, quite one-fourth of the candidates are from these four distant centres. It is unfortunate that whilst there are only seven vacancies for foundation scholarships there are no fewer than nine applicants who cannot again stand as candidates owing to age, but since the maintenance of these scholarships depends almost entirely upon the receipts from annual subscriptions and donations the profession is to blame that the number available is not greater. If every medical man were to contribute half a guinea annually the numbers of pensions and scholarships could be materially increased, if not actually doubled, and it is difficult to imagine that there are many who could not afford to send this sum every year, which works out at about 2½*d*. a week. The working classes set a good example in making provision for old age and for days of trouble; it is a pity that medical men show less forethought and too frequently leave widows and orphans to face the heart-breaking trials of poverty. When it is recollected that there are over 30,000 members of the profession and that the total amount received by the college in annual subscriptions from all sources is under £4000, it can hardly be said that generous support is given to the foundation attached to the college which provides for pensions of £30 a year to 50 medical men or their widows and educates, clothes, and maintains free of charge 50 scholars, the sons of medical men.

THE TUBERCULOSIS PROBLEM IN SOUTH AFRICA.

AN important conference was held at the beginning of May in Capetown between the mayors and the medical officers of municipalities in the Cape Peninsula to consider the steps to be taken for the prevention of pulmonary tuberculosis. One of the speakers stated that 20 years ago the life insurance companies, relying on the excellence of the climate, did not take much notice of the disease when considering a proposal for a policy, but that now, in consequence of the enormous spread of consumption during the last few years, it was reckoned, as in England, one of the chief factors against which they must guard themselves. There was abundant medical testimony as to the great spread of the disease throughout the white and the black populations, and the chief danger was ascribed to lack of hygienic precautions in dealing with the later cases of the disease, especially amongst the natives who are very much afraid of hospital treatment and herd in small rooms in such a way as to produce a great number of cases by direct infection. It was felt that the compulsory removal of advanced cases to special

houses or hospitals should be enforced at once, and in resolutions adopted by the conference the Cape Government was invited to provide such accommodation, to complete the Alexandra Hospital at Maitland which is to have special wards devoted to cases of tuberculosis, and further to appoint a commission to inquire into, and to report upon, the best means of dealing with consumption. A deputation of mayors was appointed to wait on the Government to present these resolutions, copies of which were also furnished to the members of the legislature representing the Cape division. Support for the scheme has been promised by some of the Members of Parliament but there seems to be a general feeling that the funds at the disposal of the Government will not permit of an efficient scientific commission being appointed; it is suggested that a Government inquiry might serve instead. The whole matter is to be brought up in the Parliament of the colony and it is to be hoped that no dilatory or cheese-paring policy will be adopted, for there is no doubt that the soundest economy will be in tackling the problem in a systematic and energetic manner before it has reached such well-nigh overwhelming proportions as is unfortunately the case in the countries of Europe.

INVITATION cards in connexion with the National League for Physical Education and Improvement have been issued for the Duchess of Devonshire's "At Home" at Devonshire House, Piccadilly, London, W., on June 11th, from 3.30 to 6 P.M. The Duke of Devonshire, K.G., will preside at the reception. Those announced to speak are the Lord Chief Justice, Sir Gilbert Parker, M.P., and the Lord Bishop of Ripon. Communications should be addressed to the Secretary, National League for Physical Education, Denison House, Westminster. At the reception those members of the league who wear a knot of ribbon will be pleased to answer questions and to give information to any who may desire it.

THE Home Secretary has issued an Order (Statutory Rules and Orders, 1907, No. 407) extending the provisions of Section 8 of the Workmen's Compensation Act, 1906, to a number of other industrial diseases and injuries. The schedule of diseases and injuries, 18 in number, was drawn up by a committee appointed by the Home Secretary to inquire into the matter. This committee recently issued a report of its deliberations with which we dealt in a leading article published in our issue of June 1st.

AN endeavour is being made to arrange an annual dinner of past and present members of the West African Medical Staff. It is hoped to hold the inaugural dinner in the first week of July. Members of this service who are at present on leave and who have not yet received any communication on the subject are requested to communicate with Dr. W. T. Prout, late principal medical officer, Sierra Leone, as early as possible, at 17, Canning-street, Liverpool.

THE annual Bolingbroke lecture of the South-West London Medical Society will be delivered on Wednesday evening next, June 12th, at 9 P.M., at the headquarters of the 4th Volunteer Battalion East Surrey Regiment (opposite Clapham Junction station). Dr. G. H. Savage is the lecturer and has chosen for his subject the Factors of Insanity. Medical men, whether residing in the district or not, are cordially invited to be present.

THE medical officer of health of the Cape Colony states that for the week ending May 11th 2 cases of plague in man were discovered, 1 on May 5th in a European girl and 1 on May 8th in a native male adult. Both patients resided at King William's Town. The Department of Public Health of Queensland, in a bulletin dated April 27th, states that for the week ending on that date no case of plague occurred in Brisbane.

THE annual general meeting of the Medical Officers of Schools Association will be held on Thursday next, June 13th, at 3.45 P.M., at 11, Chandos-street, Cavendish-square, W., when it will be proposed that members of the scholastic profession shall be eligible for election as associate members. This is an excellent proposal and we hope that it will recommend itself as such to the members.

AT the meeting of the corporation of the City of London held on May 30th it was decided to present the honorary freedom of the City to Lord Lister and to the Earl of Cromer. It is over 100 years since the freedom of the City was bestowed upon a member of the medical profession, the last of our *confrères* so honoured being Edward Jenner.

ON THE DIFFERENTIATION OF THE MENINGOCOCCUS FROM OTHER GRAM-NEGATIVE DIPLOCOCCI IN THE NASOPHARYNX OF CEREBRO-SPINAL FEVER CONTACTS.

BY R. M. BUCHANAN, M.B. GLASG., F.F.P.S. GLASG.
BACTERIOLOGIST TO THE CORPORATION OF GLASGOW.

THE very considerable number of Gram-negative diplococci met with in the naso-pharyngeal secretion of persons who have been in contact with cases of cerebro-spinal fever has stimulated the desire for some method by which these organisms might be accurately and rapidly differentiated. In the course of the epidemic of cerebro-spinal meningitis in Upper Silesia in the winter of 1904–05 von Lingelsheim[1] isolated seven Gram-negative cocci from the naso-pharynx and was aided in their identification by the presence or absence of ability to decompose certain sugars. These sugars were glucose, lævulose, galactose, mannite, dulcite, saccharose, maltose, lactose, and inulin. The medium on which he tested the action of a given coccus on a given sugar was plated ascitic agar with litmus as indicator. An acid reaction was produced by the meningococcus in 24 hours at 37° C. in glucose and maltose only, while by contrast the micrococcus catarrhalis for example produced no change in the whole series of sugars.

In 1905 Dr. M. H. Gordon[2] pointed out that glucose, galactose, maltose, and saccharose in a fluid medium tinted with litmus had a special application for the purpose of differentiating Gram-negative cocci, and in his recent report to the Local Government Board "On the Micrococcus of Epidemic Cerebro-spinal Meningitis and its Identification" he demonstrates the value of this differential method, with special reference to the meningococcus. The question of acid production was observed during incubation aerobically at 37° C. for a week, when it was found that acid production took place also in galactose. The time required for the production of the acid reaction in the fluid media (from 48 hours to seven days) is undoubtedly a drawback to this valuable differential test.

In the course of extended trials of various nutrient media for the cultivation of the meningococcus in this laboratory it has been found that ox serum after Löffler's formula (three parts ox serum, one part bouillon, and 1 per cent. glucose) gave the best results. Accordingly, to this medium neutral-red in the proportion of 1 to 10,000 was added as indicator. On this medium the meningococcus grows rapidly and profusely, and the neutral-red causes the growth to assume a pink tint. For primary cultures from the naso-pharynx Petri plates are used, and the resulting mixed growth generally shows a number of organisms capable of acid production. There may be one or two species indistinguishable with the naked eye from the meningococcus, but, on the other hand, the medium renders great service in at once differentiating between meningococcus and micrococcus catarrhalis (the latter producing no

[1] Deutsche Medicinische Wochenschrift, 1905, No. 26 u. 31.
[2] Dunn and Gordon: Brit. Med. Jour., August 25th.

reaction). The same medium in Petri plates is also of service for the subculture by means of parallel stroke inoculations of all Gram-negative cocci which may be found in the primary culture. In these subcultures there is usually such a marked differentiation of the species that the meningococcus, if present, can be selected at once for further diagnostic tests by means of four serum tubes, each containing one of the four sugars recommended by Gordon—namely, glucose, galactose, maltose, saccharose. With 18 hours' incubation the meningococcus shows an acid reaction in glucose, maltose, and galactose. The reaction in the glucose tube is further distinguished in the case of the meningococcus by the production of fluorescence in the water of condensation and by the formation of a yellow deposit of the growth which, as seen through the glass, has often the appearance of pus. This reaction has not been observed in connexion with any other Gram-negative diplococcus. In the galactose tube the reaction is not nearly so pronounced, the growth never appearing more than faintly acid, while in the saccharose tube growth takes place without any apparent change in the medium.

This method, together with the temperature tests (i.e., failure of the meningococcus to grow at 23° to 25° C.) affords a very rapid means of isolating the meningococcus. It has the further advantage also that the same medium is suitable for all the tests, for it has been found that a considerable loss of vitality is apt to be incurred in transferring the growth from one kind of medium to another. It may be added that the organism retains its vitality on this medium in capped tubes for at least a fortnight when kept in the incubator.

Public Health Laboratory, Glasgow.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 6th, 1829.

FOREIGN DEPARTMENT.

LITHOTRITIC OPERATION.

M. DUBOIS, the Nestor of French surgery, was lately in a very precarious state of health, so that for a long time his recovery, and even his life, was despaired of. The disease under which he laboured, was stone in the bladder, and we are happy to inform our readers, that it has ultimately been successfully removed by M. Civiale's method, in justice to whom we subjoin the following letter of M. Dubois to the editor of the *Gazette de Santé*:—

"Sir, allow me to acknowledge, by the channel of your journal, the obligations which I feel to my colleagues, for the lively interest they have shown towards me, during my late illness, from which, by the skill of my friend M. Civiale, I have eventually been freed, so that my health is rapidly recovering. I feel proud to be able to add something to the recommendation of M. Civiale's method, which is an effectual substitute for one of the most painful and dangerous operations in surgery, and the invention of which renders his name worthy of a place in the list of the benefactors of mankind.

"I have the honour to be, &c.

"A. DUBOIS."

"4th of May, 1829."

ITALIAN RED CROSS SOCIETY.—The *Official Gazette* of Italy contains a report of the annual meeting of the Italian Red Cross Society held at Rome on May 20th. In his presidential address Count Taverna referred to the society's work in the anti-malarial campaign in the Roman agro and pontine marshes districts and to its exceptional work in dealing with accidents caused by the eruptions, &c., in Calabria and the surroundings of Vesuvius. Special votes of thanks were passed to Professor Postempski for his administration of the anti-malarial campaign and to the president. The new council was elected as follows: Professor Commendatore Gaetono Mazzoni, Professor Bonaldo Stringher (Grand Cordon Cross of Italy), General Doctor Francesco Randone, Commendatore Filippo Geneovesi, and Avvocato Giovanni Ciraolo.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WEDNESDAY, MAY 29TH.

THE sittings of the Council were resumed at their offices in Oxford-street on Wednesday afternoon, May 29th. Dr. DONALD MACALISTER, the President, again occupied the chair.

Penal Cases.

The Council took up the consideration of penal cases.

The first case was that of George Covey, registered as of 1, Heathcote-street, Mecklenburgh-square, London, W.C., Mem. R. Coll. Surg. Eng. 1864, Lic. Soc. Apoth. Lond. 1865, who had been summoned to appear before the Council on the charge that he was, on April 23rd, 1907, convicted of the following misdemeanours at the North London sessions—namely, of obtaining money by false pretences and of obtaining money by fraud while being an undischarged bankrupt.

The SOLICITOR (Mr. Winterbotham) read the charge and put in a certificate of the conviction.

Mr. Covey did not appear, nor was he represented. However, a letter was read from him expressing his sincere regret for the position in which he stood. He stated that he had been 40 years in the profession and no professional complaint had ever been brought against him.

After consideration of the case *in camerâ*,

The PRESIDENT said: I have to announce that the decision of the Council is that George Covey, having been proved to have been convicted of various misdemeanours, the Registrar has been directed to erase his name from the Medical Register.

The Council then considered the case of Andrew Dunn Turner, registered as of 71, Marina, St. Leonards-on-Sea, M.B., Mast. Surg., 1882, Univ. Glasg., who had been summoned to appear before the Council on the charge that he was on Nov. 21st, 1906, convicted of the following misdemeanour at Lewes assizes—namely, of unlawfully, maliciously, and scandalously writing and publishing an obscene letter at Hastings on June 25th, 1906.

The SOLICITOR handed in the certificate of conviction. Mr. TURNER appeared in person but did not address the Council. A letter, however, was read from him in which he expressed the hope that the Council would be lenient with him for his wife's sake.

The Council having considered the case *in camerâ*,

The PRESIDENT announced its decision. He said: Mr. Turner, I have to inform you that, having been proved to be guilty of a misdemeanour, the Registrar has been directed to erase your name from the Medical Register.

The next case that came up for consideration was that of Edward John Havens, registered as of East Donyland, Colchester, Mem. R. Coll. Surg. Eng. 1879, Lic. Soc. Apoth. Lond. 1879, who had been summoned to appear before the Council on the charge that he was on Nov. 5th, 1906, convicted of the following misdemeanour at Thorpe petty session, Thorpe-le-Soken, Essex—namely, of obstructing the highway; also that he was on Dec. 17th, 1906, convicted at the like session of disorderly behaviour whilst drunk; and also that he was on April 8th, 1907, convicted of the following misdemeanour at Mistley petty session—namely, of common assault.

Mr. HAVENS appeared in person. After the charge had been read and various reports with regard to it submitted Mr. Havens shortly addressed the Council. He mentioned that he had not practised for ten or 12 years.

The PRESIDENT, after the Council had deliberated *in camerâ*, announced its decision in the following terms: Mr. Havens, the Council having considered the case proved against you, adjourn the further consideration of the question until the November session, when you will be asked to appear again before the Council to hear the final result of their deliberation.

The Council then considered the case of James Marston. It was reported to the Council by the Dental Committee that the following facts were established by the evidence:—

(*a*) The said James Marston is on the Dentists' Register as in practice before July 22nd, 1878, and of the address: The Shrubbery, East Howe, Kinson, Bournemouth.

(*b*) The said James Marston was convicted of bigamy on Jan. 16th,

1906, at the Dorset assizes and was sentenced to 12 months' imprisonment with hard labour.

Mr. Marston did not appear nor was he represented.

After consideration of the case *in camerâ*,

The PRESIDENT said: I have now to announce that James Marston, having been proved guilty of a felony, the Registrar has been directed to erase his name from the Dentists' Register.

The next case considered was that of Thomas William Frederick Stewart. The complaint against Mr. Stewart having been referred to the Dental Committee, he appeared before it on May 27th, 1907, and was duly heard. The Committee found that Mr. Stewart was on Nov. 21st, 1906, convicted at Lewes assizes of feloniously embezzling the several sums of 10*s.* on July 15th, £1 8*s.* on Sept. 23rd, and £5 5*s.* on Oct. 7th, 1906, moneys of Frederick Charles Proctor, his master.

This report having been read Mr. STEWART briefly addressed the Council.

The PRESIDENT, after the usual deliberation of the Council *in camerâ*, announced the decision. He said: Thomas William Frederick Stewart, I have to announce that the Council have carefully deliberated on your case and have come to the following finding: Thomas William Frederick Stewart, having been proved to have been convicted of a felony, the Registrar has been directed to erase his name from the Dentists' Register.

The Council took up consideration (adjourned from Nov. 29th, 1906) of the facts proved against William Henry Moseley and James Parkinson, whose names appear on the Dentists Register as "in practice before July 22nd, 1878," and who were connected with the company of Foley's, Limited.

A supplementary report on these cases was received from the Dental Committee in which it was stated that the committee had found that both Mr. Moseley and Mr. Parkinson had, since the hearing of the case by the Council in November last, done their best to sever their connexion with the company and they had both parted with their shares in the company, and they had respectively practised at Ipswich and at Uxbridge-road independently of the company and there was no evidence that their professional conduct in the interval had been otherwise than satisfactory.

Mr. Parkinson appeared in person but Mr. Moseley did not attend.

The PRESIDENT said that he was authorised by the Dental Committee to say that a certificate had now been received to the effect that Mr. Parkinson had entirely severed his connexion with the company by transferring his shares in it.

The PRESIDENT, after another brief deliberation with the Council *in camerâ*, said: Mr. James Parkinson, I announce to you and through you to Mr. William Henry Moseley that the Council, having further considered the charge against you and the report of the Dental Committee, have not adjudged you guilty of disgraceful or infamous conduct in a professional respect.

That concluded the consideration of the penal cases on the agenda.

The Council and the British Medical Association.

A report by the Executive Committee on a communication from the British Medical Association was received and entered on the minutes.

The report is in the following terms:—

The Executive Committee reports that at its meeting on Monday, May 27th, 1907, it considered the following communication from the British Medical Association:—

British Medical Association, Medical Secretary's Office,
429, Strand, London, W.C.;
Temporary address, 6, Catherine-street, Strand, W.C.,
April 16th, 1907.

DEAR SIR,—The annual representative meeting in July last decided that the British Medical Association should act as complainant in cases which, in the judgment of the Association, might require to be brought before the General Medical Council.

The Central Ethical Committee of the Association is the body whose duty it would be, on behalf of the Association, to consider whether a given case should be brought before the General Medical Council and prepare the case for the consideration of that Council.

The attention of the Central Ethical Committee has been drawn to certain decisions of the courts which make it clear that no member of the General Medical Council who has acted in such a position, for example, as member of council of a medical defence or protection society, could take part in the hearing by the General Medical Council of a case presented by the council of which he was a member. From one at least of the recorded cases, it would appear doubtful whether a person who was merely an ordinary member of a body, such as the Medical Defence Union, engaged in the presentation of cases on behalf of individual medical practitioners, could sit as a member of the Council in hearing a case presented by such a body.

The committee finds that a large majority of members of the General Medical Council are members of the British Medical Association, and some members of the General Medical Council are members of the central council of the British Medical Association or of central committees.

Having regard to these facts, but recognising at the same time that the position of the British Medical Association is somewhat different from that of bodies whose sole object is the defence of their own members, it appears to the committee advisable that the attention of the General Medical Council should be called to the position created by the decision of the Association to act as complainant in cases which may be thought to require the consideration of the General Medical Council, in order that the position of the various classes of members of the Association who might be concerned may be considered without reference to any particular case.

The committee conceives that some distinction might possibly be recognised at law in the position of the following different classes as regards their respective degrees of responsibility for the action of the Association in bringing individual cases before the General Medical Council:—(*a*) members of the Central Ethical Committee of the Association, which has been entrusted with the general duty of bringing cases before the General Medical Council without waiting for a specific authority in each case; (*b*) the central council, to which the Central Ethical Committee reports, and under whose direction it acts in some matters, while having a general authority in others; (*c*) members of central committees, other than the Central Ethical Committee, who are not members of the central council; (*d*) members of the annual representative meeting, a body annually elected, which appoints some members of and receives an annual report from the committee and gives general instructions to it, but would not have any direct responsibility for the presentation of a specific case; and (*e*) ordinary members of the Association, who are not directly engaged in its central administration.

In considering the position of these various classes it is suggested that regard may also be had to the wide range of objects of the Association and its large membership, extending throughout the British Empire, which may, it is submitted, be held to make the responsibility of an individual member of the Association, who is not a member of the Central Ethical Committee, merely nominal. At all events, such a member could not, it is submitted, reasonably be held to have prejudged a case of which he had no previous knowledge.

I am, yours faithfully,
R. H. KINSEY,
Chairman of the Central Ethical Committee.

Donald MacAlister, Esq., M.D., President of the General Medical Council, 299, Oxford-street, W.

(*b*) The foregoing letter had, by direction of the President, been forwarded by the Registrar to the Council's solicitor for his remarks. The following reply, which had been received, was read to the Committee:—

1, New-court, Carey-street, Lincoln's Inn, W.C.,
April 24th, 1907.

DEAR MR. ALLEN,—In reply to your letter of the 23rd with regard to membership of the British Medical Association, I don't think anyone reading Lord Justice Fry's judgment in Lesson's case, pages 53 to 58 of the Cases, could say that it is at all desirable that members and subscribers to the funds of the British Medical Association should sit in judgment on cases in which that body are prosecutors. Lord Justice Fry was in a minority, but both the other learned judges treated the matter as a very serious one, while coming to the conclusion that there was no sufficient proof of bias to justify them in setting aside the judgment of the Council. Lord Justice Fry held that a subscriber to an association of this kind is virtually a prosecutor, that by subscribing to the society he indicates his sympathy with the general proceedings of the body in carrying on those transactions, and that such subscribers cannot be said to be free from suspicion of bias or prejudice in the cases of prosecutions instituted by the association to which they subscribe.

I think Lord Justice Fry's judgment covers this case, the only difference being that *this* Association has many objects, and this is a new object which they are now undertaking, but I really don't think this makes any material difference.

As Lord Justice Fry says, it is a matter of public policy that the proceedings of the Council should not only be free from bias or prejudice of the judges, but that they should be free from the *suspicion* of bias or prejudice, and clearly the proper course is not for a member of the Council to withdraw from the decision of a case in which the B.M.A. are prosecutors but to withdraw from membership of that body.

Faithfully yours,
WM. H WINTERBOTHAM.

H. E. Allen, Esq., Registrar, 299, Oxford-street, W.

Mr. Lushington, at the request of the committee, also advised them in regard to the legal aspects of the question raised by the action of the British Medical Association.

It was resolved—

"That the Executive Committee, being advised that no member of the British Medical Association should act as a member of the Penal Cases Committee or take part in adjudicating as a member of the Council in cases in which the British Medical Association or any branch of it acts as complainants, are unanimously of opinion that it is under the circumstances undesirable that a member of the Council should during his tenure of office be a member of the British Medical Association or any other body which may submit complaints to the Council for inquiry.

May 27th, 1907. DONALD MACALISTER, Chairman."

Dr. SAUNDBY moved that the report should be sent to the general secretary of the British Medical Association for the information of that body. The letter of the chairman of the Ethical Committee, he said, seemed to be anticipating the powers which might at some future time be possibly conferred on the British Medical Association under the charter which was now being discussed and which at the present moment it did not possess. It was most desirable that the position of the British Medical Association towards this

Council should be made clear before they did anything more.

Sir T. MCCALL ANDERSON seconded the motion.

The motion was agreed to.

Dr. SAUNDBY then moved that the report should be formally approved of.

Sir JOHN W. MOORE seconded.

The motion was unanimously agreed to.

Students' Practical Midwifery Committee.

The reports by the Students' Practical Midwifery Committee as to the inclusion of clinical and practical work in the qualifying examinations in midwifery and gynæcology and also as to the further communications sent by the licensing bodies and teaching institutions of the United Kingdom were received.

The consideration of the recommendations in those reports was deferred until the following day.

The Council at this point adjourned until Thursday.

THURSDAY, MAY 30TH.

The Council resumed its sittings to-day at its offices at 299, Oxford-street, Dr. DONALD MACALISTER, the President, was again in the chair.

Instruction in Midwifery.

Sir JOHN WILLIAMS moved the adoption of a series of recommendations which, the Students Practical Midwifery Committee submitted, should be substituted for the existing recommendations of the Council in regard to instruction in midwifery.

The first recommendation of which Sir JOHN WILLIAMS moved the adoption was in the following terms:—

> Every student before commencing the study of practical midwifery shall be required to have held the offices of clinical medical clerk and surgical dresser and to have attended a course of lectures on surgery and midwifery.

He said that in submitting a series of recommendations from the committee on the teaching and practice of midwifery, it was not necessary for him to enter into the reasons why they had come to the conclusions contained in them. Communications had been sent by the committee to the licensing bodies and teaching institutions of the United Kingdom containing a request for their observations on the committee's first report which was received by the General Medical Council on May 28th, 1906. This report was sent to the 27 licensing bodies and the answers which had been received were considered by the committee.

Mr. YOUNG formally seconded the motion for the adoption of the recommendation.

Sir THOMAS FRASER thought that the Council should have good reasons from the committee why it put forward the recommendation in this particular form.

Dr. FINLAY pointed out that the adoption of any provisions beyond what were really necessary was likely to lead to difficulty.

Sir JOHN MOORE then moved as an amendment that the word "medicine" should be inserted before the word "surgery" so that it should be set out in the recommendation that every student should have attended "a course of lectures on medicine, surgery, and midwifery."

Dr. PYE-SMITH seconded the amendment.

Dr. SAUNDBY did not see that the amendment would make any serious difference as the recommendation would, without it, provide that every student before commencing the study of practical midwifery should be required to have held the office of clinical medical clerk.

Dr. MCVAIL explained the reasons which had influenced the committee in not including the word "medicine." The reports of some of the most important licensing bodies showed that it was useless to make the recommendation as to medicine, and it was undesirable for the General Medical Council to make important recommendations which the most important bodies would not adopt. It was for that reason that the members of the committee—some of them with great regret—cut out the lectures on medicine. Many of the members of the committee thought that medicine should be included, but from the replies they got they saw it was hopeless to get any observance of a rule if they made it. They got a consensus of opinion in favour of including surgery.

Dr. LINDSAY STEVEN considered it would be wrong to make any regulation whereby a man should be a clinical clerk before he had received any systematic instruction in medicine. He felt inclined to support Sir John Moore's proposition.

Sir JOHN MOORE, in replying to the discussion on his amendment, emphasised his view that it was desirable that a man entering on a course of practical midwifery should have a good knowledge of practical and systematic medicine and surgery.

The amendment was declared to be lost after a show of hands had been taken.

Sir JOHN MOORE then moved another amendment that the words "surgery and" should be omitted from the recommendation.

Sir T. MCCALL ANDERSON seconded the amendment. He considered that it was unnecessary to bring in this reference to surgery. A clinical medical clerk was a senior student, as was also a surgical dresser.

Dr. NORMAN MOORE supported the amendment. To put these lectures into the recommendation would be a most unnecessary obstacle to the student in arranging his work.

Mr. MORRIS said that it was very certain that if they insisted on these students being clinical medical clerks and surgical dressers they would have attended lectures.

The amendment was defeated by 16 votes to 13.

Dr. MACKAY moved as a further amendment that the following provision should be substituted for the recommendation as moved by Sir John Williams:—

> That every student before commencing the study of practical midwifery shall be required to have attended a course of clinical instruction in medicine, and to have held the office of surgical dresser, and to have attended a course of lectures on surgery and midwifery.

Dr. FINLAY seconded the amendment.

Dr. CATON remarked that the committee believed that in framing its recommendation it had outlined a reform which would make the study and practice of midwifery much more serious and much more practical in the future than it had been in the past.

Sir JOHN WILLIAMS mentioned that a large majority of the licensing bodies were in favour of having the provision as to medical clerks and surgical dressers as the committee had set it out.

The amendment was lost on a show of hands.

The recommendation proposed by Sir JOHN WILLIAMS was then adopted *nemine contradicente*.

Sir JOHN WILLIAMS then moved the adoption of the following recommendation:—

> Every student shall be required either
> (*a*) To have regularly attended the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for a period of three months; and after having received therein practical instruction in the conduct of labour, under the personal supervision of a medical officer, to have conducted 20 cases of labour under official medical supervision; or
> (*b*) To have conducted not less than 20 cases of labour, subject to the following conditions—
> That he has, during one month, given regular daily attendance upon the indoor practice of a lying-in hospital or the lying-in wards of a general hospital; and that he has therein conducted cases of labour under the personal supervision of a medical officer of the hospital, who shall, when satisfied of the student's competence, authorise him to conduct outdoor cases under official medical supervision.

Mr. YOUNG seconded the motion.

Mr. MORRIS remarked that such a provision would throw difficulties in the way of London students owing to lack of opportunities they would experience in obtaining the midwifery cases.

Dr. LANGLEY BROWNE moved as an amendment to insert in Clause (*b*) after the words "general hospital," "or of a Poor-law infirmary having a resident medical officer recognised for that purpose by any of the licensing bodies." Some of these Poor-law infirmaries, he said, would be as good as lying-in hospitals in providing the necessary midwifery experience for students, and he did not see why the opportunities which they afforded should not be utilised.

Dr. LINDSAY STEVEN seconded the amendment.

Sir CHARLES BALL commented on the provision in the recommendation that the student should be required "to have conducted 20 cases of labour." If by "conducting" it was meant that one case of labour would only be attended by one student it would be impossible for every student to get cases. It seemed to him that it was an impossible thing to require that each student should have the personal conduct of 20 cases. He could not, therefore, see how this recommendation could be carried out.

Sir THOMAS FRASER, speaking from the experience on this point in Edinburgh, thought that the committee had fixed the number of cases much too high. The same purpose would be served by eight or ten cases.

Dr. LATIMER, as a general practitioner, expressed the opinion that the whole profession would welcome the increase in the systematic instruction on midwifery. It behoved them as a profession to have their members fully equipped in this matter. With the new departures in respect to midwives, he considered that a good deal of consultative work would occur for them and therefore they should not whittle down the number of cases to be attended.

The PRESIDENT at this point announced that two amendments besides that of Dr. Langley Browne had been handed to him bearing on the subject now under consideration. It would be for the convenience of the Council in carrying on the general discussion if their terms were announced at this stage. He would put them one by one after the discussion had terminated.

Sir CHARLES BALL intimated that he would move an amendment to the effect that in the case of the student who attended at a lying-in hospital or the lying-in wards of a general hospital for three months only ten cases of labour should be personally conducted, and in the case of the student who gave attendance for one month only 15 cases should be required.

Sir T. MCCALL ANDERSON undertook to second this amendment.

Dr. SAUNDBY put forward an amendment to the effect that the Council should record its opinion that it was desirable that the provisions contained in the recommendation should only be put into operation "where the necessary hospital facilities exist." He said that he did not think it was fair to pass a resolution of this sort with the knowledge that a great many teaching bodies could not carry out its provisions. While he did not want to throw cold water upon them he thought that the Council should, at least, prefix them with such a preamble as would show that it recognised that they could not be carried out in parts of the country like Birmingham.

Mr. MORRIS was the seconder of Dr. Saundby's amendment.

Dr. MCVAIL hoped that the Council would not accept any qualification of the kind put forward by Dr. Saundby. He said that there was a great scientific school of medicine at Cambridge. He wondered how Parliament would regard matters if that University said that their men need not know anything about clinical medicine or clinical surgery because they had not got the requisite opportunities of obtaining the training on the spot. Now, the question before the Council really resolved itself into this—what was the number of cases requisite for obtaining practical instruction in midwifery? He did not think any committee had ever given more attention to the matter remitted to it than had the committee which brought forward the recommendations which they were now discussing. From the information which the members had before them they came to the conclusion that a man should not be certified as being qualified in midwifery in the sense of the requirements of the Medical Act unless he had attended 20 cases of labour. If a teaching body said that it could not provide 20 cases for each student it was surely not a part of the Council's work to help in passing men into the profession who had not been sufficiently taught. If students could not get the requisite number of cases in one locality they should go elsewhere for their midwifery experience. He objected entirely to the proposals of Dr. Saundby. The Council had to insist on the students getting adequate teaching. The committee had felt that they should take some steps to secure that students should be apprised of the strides which had been made in the teaching of midwifery. 20 cases should be the minimum of the number conducted by them.

Dr. LITTLE considered that the Council should only expect what was reasonable and what could be done at medical schools, but so far as they had power the authorities of the latter should make the recommendations of the Council obligatory. He would support the amendment of Sir Charles Ball, although he thought that that gentleman underrated the facilities for midwifery in the Dublin hospitals.

Sir HUGH BEEVOR expressed sympathy with Dr. Saundby's propositions.

Sir CHRISTOPHER NIXON confirmed all that Dr. McVail had said about the time and labour given by the committee to its report. Members of the Council must remember what it was that led to the appointment of the committee to consider the instruction given in midwifery. It was appointed to deal with statements to the effect that the practice of midwifery as carried on throughout this country led to a considerable amount of mortality. This was, therefore, a question which affected the community generally and on which the general public would watch with very great interest the action taken by the Council. It was a question of human life. He did not think that the Council ought to hesitate for a moment to make a recommendation on this subject which, if not carried out now, would be carried out in the future. The recommendation of the Council should be based on what they considered necessary to prevent the loss of human life, even although it would not be possible in particular places to have it carried out at once.

Dr. KIDD, as a general practitioner, expressed agreement with the views advanced by Dr. McVail.

The PRESIDENT then proceeded to put the various amendments *seriatim* to the vote.

The amendment of Dr. Saundby was lost on a show of hands.

Dr. Langley Browne's amendment to include Poor-law infirmaries amongst the institutions where students might gain midwifery experience under the conditions of Clause (*b*) was unanimously agreed to.

Sir CHARLES BALL said that before his amendment was put to the vote he would like to make some remarks on it. It was quite possible that a student might have seen 100 midwifery cases but might not have conducted 20. He would repeat that if each case was to be conducted by one man, and one man only, then the material available in large towns was not always sufficient to provide each student with 20 cases. In asking the Council to reduce that number he would point out that under the conditions of Clause (*a*) of the proposed recommendation much more careful teaching would be given than under the conditions of Clause (*b*). That was the reason why he proposed to substitute 10 cases for 20 cases in the first clause and 15 cases for 20 cases in the second. It had been shown that while mortality was decreasing in hospitals in midwifery cases it was not decreasing outside. That bore out his argument for differentiating the cases as he had done in his amendment.

Dr. WALKER declared that he was in entire sympathy with Sir Charles Ball's amendment. As a teacher he did not believe that it was necessary for each student to have 20 cases. If he had resided in a maternity hospital for one month he would know a great deal more about midwifery at the end of the time than if he had conducted 100 cases on his own responsibility.

Sir CHARLES BALL'S amendment was lost on a show of hands.

The original motion as amended by the introduction of Dr. Langley Browne's proposal was then put as a substantive motion and agreed to.

Sir JOHN WILLIAMS then moved the adoption of the following recommendation of the committee:—

> No certificate that the student has conducted the above-mentioned 20 cases of labour should be accepted unless it is given by a member of the staff of a lying-in hospital, or of the maternity charity of a general hospital, or of a dispensary having an obstetric staff recognised for that purpose by the licensing bodies, or of a Poor-law infirmary having a resident medical officer as recognised.

Dr. LATIMER seconded the motion which was agreed to.

Sir JOHN WILLIAMS then moved:—

> That the attention of the licensing bodies should be called to the necessity in the public interest of instituting clinical and practical examinations in midwifery and gynæcology in connexion with each of the qualifying examinations.

Dr. LATIMER seconded the motion which was carried by 16 votes to 11. Four members who were present declined to vote.

It was also agreed that copies of the resolutions which had just been passed and of the reports of the Students Practical Midwifery Committee should be sent to the licensing bodies and teaching institutions of the United Kingdom.

The Report of the Education Committee.

On the motion of Dr. MACKAY the interim report of the Education Committee was received and entered in the minutes.

Dr. MACKAY then moved that the recommendation contained in the interim report of the committee should be adopted. Its terms ran thus:—

> That the President be authorised to apply to the licensing bodies for information regarding the dates at which the various professional examinations were entered for and completed in the cases of those of their licentiates the statistics of whose educational career are included in the table upon which the report is founded.

He proceeded to explain to the Council the scope of the

report of the Education Committee, one of the features of which was a very elaborate table of statistics referring to the ages at which students commenced study and at which they qualified, together with figures relating to the length of the curriculum actually pursued. Great care and labour had been expended by the office staff of the Council in drawing up this large table which dealt with the educational history of 1111 Licentiates and Graduates in Medicine of the year 1906. Of these, 542 qualified in England, 402 in Scotland, and 167 in Ireland. Now this table of statistics, which was presented with the report, had been divided into three great sections. There was amongst the entrants one central group containing about 80 per cent. of the whole and these commenced study at an age falling within the period of five years from 17 to 21 years inclusive. The group of those who entered earlier than 17 years of age contained about 5 per cent. of the whole, whilst the group of those who entered after 21 years of age was 15 per cent. Amongst the licentiates a similar arrangement prevailed. The central group, numbering about 80 per cent. of the whole, was composed of those who qualified within the period of seven years between 23 and 29 years of age inclusive. Those who qualified at 22 years of age or under numbered 5 per cent. of the whole. Some interesting statistics had been tabulated with regard to the mean age of the 1111 entrants, the ages above 25 being reckoned as 25. That table set forth that in the case of England the mean age was 19 years 2 months, in Scotland 19 years 3 months, and in Ireland 19 years 7 months. That gave a general mean age over all the country of 19 years 3 months. The preliminary examination was associated with students' registration, but everyone was aware that the registration of the student was a voluntary act. In anything which the Council might do with the object of improving the standard of the preliminary examination it had to be careful to carry with it the good will and support of all the licensing bodies. This question had engaged much of the attention of the Council. In 1891 more active work was begun in respect to it. In consequence of the many complaints which had been sent to the Council the matter was taken up very thoroughly and the whole system of entrance examinations was revised. In 1900 a most important step was taken and an elaborate report on the subject was undertaken by three experts appointed by the Council. He could only characterise that document as one of the most important educational documents ever drawn up in this country, because it went into the educational conditions of the time, and it showed the Council what could reasonably be demanded and the lines upon which further progress should be laid. The Council had had since that time a definite purpose and they were reaching the stage at which the senior examination should be the sole portal of entry to the medical profession. He thought that it ought to be recognised that the Council had played a most important part in the general education of the country. Now, with regard to the length of the curriculum something must be said. There were many complaints with regard to the length of the present curriculum, and the final teachers had stated that the time for their important subjects had been much encroached upon. One suggestion was to add a sixth year to the curriculum, and another was to cut out certain preliminary studies. A third suggestion was to institute a system of "blocks." Whether any one or two of these suggestions should be adopted would require considerable attention on the part of the Council, because in whatever they adopted they must enlist the sympathy of the licensing bodies. The mean length of the curriculum of the licentiates who qualified in 1906 was 6 years 11·3 months over the whole of the country. In England it was 7 years 4·9 months, in Scotland 6 years 6·2 months, and in Ireland 6 years 5·1 months. Dr. Mackay then directed the attention of the Council to certain remarks made in the concluding paragraphs of the report. The figures which were submitted in the report, it was therein stated, would afford material for a preliminary study of the questions at issue. It was important to determine whether in the present circumstances the later years of the curriculum, in the case of those who completed the course under seven years, were being encroached upon by work properly belonging to the earlier period, and whether any action was needed to insure for each or any of the groups of subjects a due proportion of the time allotted to the whole. The statistics embodied in the report threw a certain amount of light on the subject. In this connexion it became exceedingly important to know that there was a marked difference between the course pursued in Scotland and that pursued in England. They had in the case of the larger bodies in England, in the Conjoint Board and the University of London, in full operation what was known as the "block" system. That was to say, that candidates were forced to give at least two years to studies belonging to the final examination. In the case of the Scottish universities there was no such requirement and it was not unreasonable to infer that the difference between the average lengths of the curriculum as actually pursued in the two countries might be associated with this important diversity. The Education Committee now wished to apply to the licensing bodies for further particulars about those licentiates who qualified in seven years. They did not think it would be necessary in this connexion to deal with the cases of those who had spent more than eight years in the study of medicine. Such an investigation promised to yield valuable results.

Dr. NORMAN MOORE seconded the motion. After the thoroughly explanatory and lucid statement of Dr. Mackay on the report it would be unnecessary for him to make any remarks except to emphasise that this was an interim report, or, so to speak, the first volume of a collection of information which would be of great assistance to the Council.

The PRESIDENT said that he had seldom seen a body of statistics which promised to yield more fruitful results than those embodied in the report.

Dr. Mackay's motion was then unanimously agreed to.

The Finance Committee's Report.

Dr. PYE-SMITH moved the adoption of the report of the Finance Committee. That report showed that the income of the General and Branch Councils for the year ending Dec. 31st, 1906, having been £3473 14*s.* 2*d.* and the expenditure for the same period having been £3433 8*s.* 7*d.*, there was a surplus of £40 5*s.* 7*d.* The Finance Committee further put on record its opinion that this result might fairly be considered satisfactory when it was remembered that the cost to the three branches of the election of Direct Representatives amounted to £870 4*s.* Had it not been for this expense the surplus would have been £910 9*s.* 7*d.*, as against £907 18*s.* 8*d.* last year. The committee in the course of its report congratulated the Council on the expedition with which it carried out its business last year. The number of days occupied by the sessions was the same as in 1905, for though the summer session was a day longer a day was saved at the winter session. This was the only way in which any large economy could be effected and the committee desired to ask the Council to continue to bear in mind the great importance of carrying on its deliberations with business-like brevity. The committee embodied a recommendation in its report that a grant of £100, if required, should be made towards the expenses of the Irish Branch Council during the current year.

Mr. TOMES seconded the motion for the adoption of the report and it was unanimously agreed to.

The Dental Committee's Report.

The report of the Dental Education and Examination Committee was received.

Mr. TOMES moved that the application of the University of Sydney for the recognition of its degree of Bachelor of Dental Surgery should be acceded to. He said that the Dental Committee was now prepared to recommend the Council to accept this motion. At the November sittings of the Council it was agreed to defer the consideration of the application of the University of Sydney for recognition of its degree of Bachelor of Dental Surgery until further information had been received whether the general medical and surgical instruction was given at a general hospital or at a special school, and whether reciprocal recognition was given to British qualifications. The University of Sydney had informed the Registrar of the Council that the medical and surgical portions of the dental students' education were conducted at a large general hospital, and the committee reported on the information furnished that no exception could be taken to the conditions prevailing at it. They also were satisfied that reciprocity was adequately secured.

Mr. MORRIS seconded the motion, which was carried.

Mr. TOMES further moved that the following recommendation of the Dental Committee should be adopted by the Council:—

That it be represented to the Secretary of State for the Colonies that it is desirable that recognition of foreign dental diplomas shall only be granted in the case of those countries which give reciprocal recognition to British diplomas in dental surgery.

He pointed out that this motion was brought forward to meet a state of affairs which had arisen in Mauritius. He said that instead of prohibiting the use of a title the colonies were with complete uniformity adopting an absolute prohibition of unqualified practice—a state of things which they hoped for in this country but which seemed to be far distant. The committee noted that under a Mauritius ordinance it was made unlawful under penalty for unqualified and unregistered dentists to practise in that colony. However, by a section of that ordinance the holders of British qualifications were placed in the same position as the holders of certain foreign diplomas as regarded practice in Mauritius. These foreign diplomas could be obtained under less stringent conditions than in this country, and would, on account of their insufficiency, not be recognised for registration in Great Britain. It was, however, the case that in certain other colonial ordinances a safeguard had been provided by the requirement that the diplomas of foreign countries should be recognised only in the case of those countries which provided reciprocal recognition for British registrable diplomas. The committee thought that all these circumstances should be brought under the notice of the Secretary of State for the Colonies.

Dr. LINDSAY STEVEN seconded the motion, which was agreed to without further discussion.

Examinations for the Services.

Dr. MCVAIL, as chairman of the Examination Committee, presented a report analysing the successes and failures of medical licentiates who had undergone the examinations for the Royal Navy Medical Service, the Royal Army Medical Corps, and the Indian Medical Service within the past eight months.

The report was received and entered on the minutes.

Students' Registration Committee.

Sir HUGH BEEVOR presented the report of the Students' Registration Committee, to which the Council gave its approval.

Appointment to Committees.

The following committees of the Council were then appointed:—

Examination Committee.—Dr. Pye-Smith, Mr. Young, and Dr. Caton (nominated by the English Branch Council); Sir Thomas Fraser, Dr. Finlay, and Dr. McVail (nominated by the Scottish Branch Council); and Sir Thomas Myles, Dr. Little, and Sir Charles Ball (nominated by the Irish Branch Council).

Education Committee.—Dr. Norman Moore, Sir G. Philipson, and Sir J. Williams (nominated by the English Branch Council); Dr. Mackay, Sir John Tuke, and Sir T. McCall Anderson (nominated by the Scottish Branch Council); and Dr. Little, Sir C. Nixon, and Sir John Moore (nominated by the Irish Branch Council).

Public Health Committee.—Dr. Cocking, Mr. Power, and Dr. Langley Browne (nominated by the English Branch Council); Dr. Norman Walker, Dr. Lindsay Steven, and Dr. McVail (nominated by the Scottish Branch Council), and Sir John Moore, Sir T. Myles, and Dr. Adye-Curran (nominated by the Irish Branch Council).

Pharmacopœia Committee.—The President (chairman), Dr. Norman Moore, Sir G. Philipson, Dr. Caton, Dr. Barrs, Sir Thomas Fraser, Dr. McVail, Sir John Moore, and Dr. Little.

Finance Committee.—Dr. Pye-Smith (chairman), Mr. Tomes, Sir John Tuke, and Dr. Little.

Dental Committee.—The President (chairman), Mr. Tomes, Mr. Hodsdon, and Sir Thomas Myles.

Dental Education and Examination Committee.—Mr. Tomes (chairman), Mr. Morris, Dr. Lindsay Steven, Dr. Finlay, Sir Thomas Myles, and Sir Charles Ball.

Students' Registration Committee.—Sir Hugh Beevor (chairman), Dr. Norman Moore, Sir John Tuke, Dr. Mackay, Sir C. Nixon, and Dr. Adye-Curran.

Executive Committee.—Sir Hugh Beevor, Dr. Pye-Smith, Mr. Young, Mr. Tomes, Sir John Tuke, Dr. McVail, Sir John Moore, and Sir Charles Ball.

Penal Cases Committee.—Dr. Saundby, Mr. Tomes, Dr. Finlay, and Sir C. Nixon.

The Council then adjourned until the following day.

FRIDAY, MAY 31ST.

The Council resumed its sittings at noon to-day, Dr. MACALISTER, the President, again occupying the chair.

The Report of the Pharmacopœia Committee.

Dr. NORMAN MOORE presented the report of the Pharmacopœia Committee and moved its adoption. The report contained a copy of the international agreement respecting the unification of the Pharmacopœial formulas for potent drugs signed at Brussels on Nov. 29th, 1906. The committee in the course of its report expressed the opinion that the time had now arrived when a communication should be addressed to the Royal Colleges of Physicians of London, of Edinburgh, and of Ireland, and to the other medical authorities, inviting their suggestions for the revision of the Pharmacopœia, in preparation for the next issue. A circular letter had accordingly been drafted and would shortly be issued by the President on behalf of the Council.

Sir JOHN MOORE seconded the adoption of the report which was agreed to without debate.

The Proposed Ordinance of the University of Edinburgh.

The Council then proceeded to consider reports submitted to it bearing on the alterations in regulations for degrees in medicine introduced into the proposed new ordinance of the University of Edinburgh. The Council had before it the sections of the ordinance at present in force and the provisions by which it was intended to supersede them. The proposed new ordinance contains the following provisions:—

Each candidate shall be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz.: first, in botany, zoology, physics, and chemistry; second, in anatomy and physiology; third, in pathology and materia medica and therapeutics; and fourth, in surgery and clinical surgery medicine and clinical medicine, midwifery, forensic medicine, and public health.

Candidates who profess themselves ready to submit to an examination in any of the subjects comprised in the first division, viz.: botany, zoology, physics, and chemistry, may be admitted to examination in one, or in any number of, these subjects, at any examination held after they have attended the necessary qualifying course or courses in each of the subjects professed.

Candidates who have passed their examinations in the subjects comprised in the first division may be admitted to examination in each of the subjects of the second division, after they have attended the necessary qualifying course or courses in that subject - viz., in physiology at any time; in anatomy at any time after the end of the first half session of their third winter session.

Candidates who have passed their examinations in the subjects comprised in the first and second divisions may be admitted to examination in each of the subjects of the third division after they have attended the necessary qualifying course or courses in that subject—viz., in pathology at any time after the end of the third summer session in the case of those students who begin the medical curriculum in October, and at the end of the fourth summer session in the case of those students who begin their medical curriculum in May; and in materia medica at any time after the end of the fourth winter session; provided always that candidates may be admitted to examination in practical pharmacy, and also the physical, chemical, and botanical characters of medicinal substances, at any examination held after they have attended the necessary qualifying course of instruction in that subject.

Candidates who have passed their examinations in the subjects comprised in the first, second, and third divisions may be admitted to examination in each of the subjects of the fourth or final division after they have attended the necessary qualifying course or courses in that subject—viz., in forensic medicine and public health at any time; in midwifery at any time after the end of the first half-session of the fifth winter session; in practice of medicine and surgery at any time after the end of the fifth winter session; and in clinical medicine (including the subject of the diseases peculiar to women) and clinical surgery at the end of the fifth year of study.

The Examination Committee, after considering these sections, came to a resolution that they were not in accordance with the terms of the thirteenth recommendation on professional examination adopted by the General Medical Council on June 9th, 1896, which recommendation "suggests that a percentage of not less than 60—supposing that the pass requirement be 50 per cent.—should exempt from re-examination in such subject."

The PRESIDENT said that before they considered this matter he would like to express his wish that the resolution of the Examination Committee should not be entered upon the minutes in the form in which it stood, as the reference in it was misleading and historically inaccurate. He thought it was for the members of the Examination Committee to withdraw what was a mistaken reference.

The reports bearing on the subject of the proposed new Edinburgh ordinance, with the exception of the resolution referred to by the President, were then entered in the minutes.

Dr. MACKAY thereupon moved that the Council should adopt the report of the Education Committee to the effect that "the changes embodied in the proposed new ordinance of the University of Edinburgh are in accordance with the

requirements of the Council in regard to professional education." He wished it to be understood that the committee offered no opinion as to the manner in which the subjects should be combined or distributed for the purpose of teaching and examination.

Dr. NORMAN MOORE seconded the motion, which was carried.

Dr. MCVAIL then moved:—

That the Medical Council is of opinion that when the subjects which are usually taken together are entered upon singly the pass standard should be at least 60 per cent.

The PRESIDENT said that before Dr. McVail spoke to his motion he would like to point out that the Council was asked by the Privy Council whether this ordinance was contrary to its existing regulations. However, they were now being invited by Dr. McVail to pass an *ad hoc* resolution which was not now on their books. He could not help thinking that was a dangerous course for the prestige of the General Medical Council. The motion was contrary to their actually existing resolution and therefore if it were carried it would mean rescinding the latter.

Dr. MCVAIL said that he must ask the kindness of the Council to allow him to explain the position. The Council, he might point out, was required to inspect the licensing bodies. What kind of inspection could they carry out if they were to have a man coming up for a single subject? They were asked by the University of Edinburgh to believe that the great bulk of the students would take their subjects in divisions. Who were the men who would take them in divisions? Would it be the good men or the weak men? He asked the Council to answer for themselves the question whether this proposed legislation was for strong men or weak men. It already happened that the University of Edinburgh had power under a particular ordinance.

The PRESIDENT: Excuse me interrupting you, Dr. McVail, but I might suggest that it would be better to keep out of these university matters and stick to the subject of the motion.

Dr. MCVAIL: Very well. He held that as the Privy Council had submitted the ordinance for the opinion of the General Medical Council they should make their representations in reply. He held that they were invited to make any observations which they had on it. Further, he might point out that this ordinance had a most important effect. It would at once lead to changes in many of the other licensing bodies. Of course, if the changes would be for the better, good and well. For his part he thought that they were very much for the worse. The ordinance would hinder the inspection work of the Council. The examiner would not see the student at work on more than one or two subjects. He did think that there was the gravest objection to the ordinance from the examination point of view and from the point of view of the inspection of examinations. It was very bad for the student, and the ordinance should not pass without the opinion expressed in his motion being placed before the Privy Council.

Sir JOHN MOORE seconded the motion. He understood that it was the intention of the Edinburgh faculty that the standard to be attained by students in the various subjects should be raised. However, he thought that the Council should express the opinion contained in Dr. McVail's motion. It was a most mischievous thing that students in the first years of their study should be allowed to take the subjects of examination piecemeal.

Dr. MACKAY thought that what Sir John Moore had mentioned with regard to the raising of the standard should bring the discussion to an end. They were all of opinion that a higher standard ought to be exacted when subjects were taken separately, but the University of Edinburgh had assured them that the standard there was to be heightened.

Sir THOMAS FRASER said that Dr. McVail had told them that the great object of the ordinance was merely to allow men to scrape through. That was nonsense.

Dr. MCVAIL: I did not say that. I said that the object of the ordinance was that men would be allowed to go in for examination in separate subjects.

Sir THOMAS FRASER: And the result would be that men would scrape through. That was not the case. The Edinburgh authorities, on the contrary, wanted to make their medical education more thorough and they could only do that by the changes which they proposed in the ordinance. He repudiated in the strongest and most emphatic manner the suggestion that the aim and object of this change of ordinance was to let men get through easily.

Dr. MCVAIL: I must take exception to that. Sir Thomas Fraser has imputed to me opinions which are not in my mind. I am speaking here as a member of the Examination Committee which has to satisfy the Privy Council in dealing with certain changes in the ordinance. The object of the ordinance is to let men through in single subjects.

The PRESIDENT: You have made your explanation, Dr. McVail. You are not entitled to make a second speech at this stage.

Sir THOMAS FRASER: I accept the explanation.

Dr. MCVAIL: It is not an explanation.

Sir THOMAS FRASER said that the passing of the motion of Dr. McVail might be a very serious matter. It had taken the Edinburgh authorities more than five years to determine upon the change. If the Privy Council accepted the suggestion the only course for them would be to throw out the ordinance. That would be a matter for deep regret.

The PRESIDENT pointed out that Dr. McVail's motion was not the motion of the Examination Committee. He (the President) was a member of the University Court of Glasgow which had taken a definite position against this ordinance. For himself he had determined when he was occupying the chair at the meetings of the General Medical Council that he must be absolutely neutral, and that he must guide it so that it might come on this occasion to a decision which was universal in its application and not particular to this ordinance. His view was that what the Council was now asked to do was to carry a motion which appeared to be generally uniform but which was only applicable to this particular case.

Dr. MCVAIL, in replying to the discussion, said that it was somewhat unfortunate in this connexion that he happened to be on the governing body of a university which opposed the principle of this ordinance. That university opposed it on the broad ground of general medical teaching. Personally he would therefore rather not have had to deal with this matter, but it had fallen to him officially to consider it as chairman of a committee. However, he could not advocate opinions which he did not believe. He could assure the Council that there was no desire on his part or on that of anyone with whom he had been connected to reflect in any way upon the University of Edinburgh. That University thought that by splitting up the subjects it would attain to a higher standard. He believed that it would not do so. The standard would be lowered and the influence on other institutions would be bad, and the ordinance would make the work of inspection on the part of the General Medical Council extremely difficult and of far less value than it had hitherto been.

On a division Dr. McVail's motion was defeated. Seven members voted in favour of it and 17 against it, whilst five members who were present declined to vote.

Mr. THOMSON then moved:—

That the Council having considered the proposed ordinance of the University of Edinburgh find nothing therein which is contrary to the Council's resolution on professional education and examination.

Dr. MACKAY seconded the motion which was carried by 15 votes to three. Nine members present did not record votes.

Appointment of Registrar.

The Council unanimously agreed to reappoint Mr. H. E. Allen to the office of General Registrar.

Concluding Proceedings.

Replying to a vote of thanks,

The PRESIDENT said that he had been accused this session of having made the Council sweat. He was sure that he had drawn an equal amount of perspiration from himself. He thanked members for the sympathy which they had extended to him in the difficult position which he had that day occupied. From one point of view he sympathised with Dr. McVail, but he could not follow his own bent in that matter if by doing so he felt that he was leading the Council beyond the proper lines of action.

This concluded all the business on the agenda paper, and the session being at end the Council rose to meet again in November.

THE HANDEL COSSHAM MEMORIAL HOSPITAL.—The Handel Cossham Memorial Hospital, Kingswood, near Bristol, was formally opened on June 1st by the Right Hon. Augustine Birrell, M.P., in the presence of a very large gathering. It has been erected in accordance with the will of the late Mr. Handel Cossham, formerly M.P. for a division of Bristol. The cost of the building has been £30,000 and about £80,000 have been set aside for its maintenance and support.

NOTES UPON HEALTH RESORTS.

THE BRINE BATHS OF DROITWICH.

DROITWICH was the scene of an interesting ceremony on Saturday, June 1st, on the occasion of the opening of extensions to the world-famous brine baths. It speaks well for the reputation of this quaint, restful place as a health resort that the number of visitors undergoing treatment there steadily increases year by year, and the little borough has moved with the times and, determined not to be outstripped by continental spas, has made a praiseworthy attempt to provide for its visitors improved accommodation and to increase such comforts as minister to the needs of those particular cases which are benefited by saline bath treatment. The class of patient to which Droitwich appeals most includes sufferers from muscular rheumatism, sciatica, and chronic gout, and there can be no doubt that these and others gain relief by a course of warm natural brine baths. The waters of Droitwich enjoy the distinction of being the strongest natural brine found in Europe. The total salts amount to no less than 50 ounces per gallon, which is ten times as much as is contained in a gallon of sea-water. Common salt, however, is not the only constituent, for there are present also sodium sulphate, magnesium chloride, sodium iodide, and calcium sulphate. Droitwich brine is richer in salines than even the waters of the Dead Sea. Suitably diluted the water acts as a purgative saline when taken internally. Further, Droitwich brine is decidedly radio-active, or at least yields a gas on boiling which exhibits marked radio-active effects. It seems probable that radio-activity is an important factor in balneo-therapeutics and may possibly account for the therapeutic effects of natural water being so marked, while frequently waters artificially prepared are not analogous in their action.

At the opening ceremony referred to an interesting account of the history of Droitwich was given by the town clerk. It appears that Droitwich, under the name Salinæ, was a town of considerable importance in the time of the Romans, but the first record of the manufacture of salt is in A.D. 816, when Kenulph, King of Mercia, endowed the great church at Worcester with ten salt furnaces at Droitwich. At this time the town was called Wyche, from the Scandinavian "wic," a shallow bay for the evaporation of sea-water, and hence any place where salt is manufactured. The prefix "droit" was given by Edward III., the word signifying the granting of a royal assent or right to manufacture salt in the town. The therapeutic effects of an immersion in Droitwich brine were apparently first observed during the cholera visitation of 1832, certain sufferers having been put into the heated brine because no other hot water happened to be available. In 1836 the Royal Brine Baths were opened and since that time a very large number of patients suffering from rheumatism, sciatica, gout, and nervous disorders have sought relief at Droitwich. The baths have now grown to the dimensions of a continental spa, hotel accommodation has been increased and improved, and every effort is being put forward to make the place attractive to the visitors. The extensions to the brine baths, known as St. Andrew's Brine Baths, which were formally opened by the Earl of Coventry, Lord Lieutenant of the county of Worcester, were decided upon by the late Mr. Thomas Cobbett, but on his death over a year ago the work was taken in hand by the present trustees of the estate, Lord Cobham and Mr. J. W. Willis Bund. The additions consist of an enlarged entrance hall, lounge, waiting rooms, and a new series of ladies' baths, all well planned, substantially built, and conducive to the comfort of the patient. In addition there are two large swimming baths, one for ladies and one for gentlemen. "Swimming baths" is, however, hardly the correct term to apply, since so buoyant is the water that it is impossible to swim in it, and any effort to swim terminates in a few futile kicks of the legs in the air. In the erect position the patient sinks to about the level of his armpits. In treatment by immersion the patient's body is kept under the brine by means of bars of wood placed across the bath. The temperature is regulated by means of steam which is turned directly into the brine.

Amongst those present at the opening ceremony on Saturday were several medical men from London and the provinces who were entertained at luncheon in the Salters' Hall by the mayor (Councillor C. J. Pond) and corporation. Appropriate speeches were made by the Mayor, Lord Cobham, Mr. Harmsworth, M.P., and Dr. F. de Havilland Hall. The last-named gentleman proposed the toast of "Success to Droitwich," and he expressed the hope that the day's proceedings would be the means of impressing upon the medical profession that there were no brine baths of the same kind anywhere in Europe or indeed anywhere else in the world. The toast "The Medical Profession" was proposed by Mr. Harmsworth and was replied to by Dr. G. W. Hamilton Cumming and Mr. E. Shirley Jones. A conversazione held in the Salters' Hall in the evening brought a very pleasant and successful day's proceedings to a close.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Sanitary Circumstances and Administration of the Ebbw Vale Urban District, with special reference to the Prevalence of Infectious Diseases therein, by Dr. R. A. FARRAR.[1]—Dr. Farrar gives some interesting particulars regarding housing questions in Ebbw Vale, a Monmouth district with a population of about 25,000, occupied mainly in mining, smelting, forging, and similar works. Not long ago this district was conspicuous for the squalor and insanitary condition of most of its house property, and many dwellings and their surroundings are still in a very objectionable state. But recently well-planned and well-built artisans' houses have been erected at the rate of between 100 and 200 in each year and at present there are no signs of diminution in building activity. The competition for new houses is keen and they are taken up as fast as they can be built. The principal credit for the great alteration thus effected is due to the establishment of building clubs among persons employed by the Ebbw Vale Steel, Iron, and Coal Company. The company, which employs about 7000 workmen, has financed the building clubs by advancing the necessary money for building (at 4 per cent.), and has also in most instances leased the sites at a very moderate ground rent and given stone free for the labour of quarrying it. The company holds the title deeds of houses built by the clubs until such time as they become by purchase the absolute property of the members renting them. The usual arrangement is to pay 3*s.* a week to the sinking fund in addition to the rent of the house, which is usually about 6*s.* a week. Various provisions are made to meet delays in payment and to enable members to tide over periods of sickness. The clubs are limited to a membership of 20 and about 17 have so far been formed. An appendix to the report gives in full the rules which are adopted. Dr. Farrar reports favourably on the character and sanitary condition of these building-club dwellings. Houses rented at 6*s.* a week contain, on the ground floor, a sitting-room, front and back kitchens, a bath-room with hot and cold water laid on, and a pantry, and upstairs there are three bedrooms. Most of them have garden plots and the report recommends that cultivation of these plots should be insisted upon as a condition of tenancy. In addition to the above building clubs various building societies are doing a considerable business in the district. One of these societies makes a speciality of houses built of cement-concrete blocks ten inches thick with a hollow space within of three and a half inches. Houses built of these blocks are warmer and drier than those built of solid brick or stone, and the material, made from waste slag, is found to be cheaper than brick. There are evidently many conditions in Ebbw Vale to which serious objection must be taken by the sanitarian, but it is satisfactory to note that in some of these matters the district is passing through the same kind of transition stage as can be seen in the case of its housing. The public water-supply is being supplemented by the construction of a new reservoir of 180 million gallons capacity and the district will soon participate in the extensive works of sewerage now being carried out by the Western Valleys Sewerage

[1] London: Wyman and Sons, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. No. 255. Price 7d.

Board. Public scavenging in part of the district is carried out by direct labour and in the rest by contractors, and the report compares the two systems to the advantage of the former. There is special need for the provision of a dust destructor and for the abolition of existing "tips" for refuse. The elementary schools of the district present many grave sanitary defects. The isolation hospital accommodation is limited and no attempt is made to isolate cases of scarlet fever. In dealing with the latter it is the custom of the sanitary authority to give free supplies of preparations of eucalyptus oil for inunction. The report contains an account of the local incidence of the principal infectious diseases in Ebbw Vale during the last five years. The infantile mortality-rate, in view of the general character of the district, cannot be considered exceptional: in the five years reviewed it has ranged between 125 and 169 per 1000 births. Dr. Farrar strongly urges the advantage of combining a series of districts in the neighbourhood, which are conveniently linked by railway communication, for the purpose of securing a medical officer of health who would be able to give the whole of his time to the supervision of the sanitary condition and administration of the areas under his charge.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The Port of London.—The Aliens Act, 1905, which came into operation at the commencement of 1906 has apparently worked smoothly in the Port of London during its first year of operation. By the provisions of this Act any ship conveying more than 20 alien steerage passengers is an "immigrant" ship. This, at least, is the number fixed by the Secretary of State at the present juncture. During 1906 the total number of passengers arriving in the Port of London who were liable to examination under the Aliens Act was 14,939 and out of these a certain number were found to be "undesirable" on medical grounds and were refused leave to land. With reference to plague, it appears that the French Government now insists upon the destruction of rats by means of a special apparatus in the case of ships coming from a port regarded as being "infected" with plague or having called at such a port, and in the case of ships having taken on board more than 50 tons of merchandise coming directly from a country considered to be "infected" with plague. These regulations apply even to ships which have already discharged the whole of their cargo in one or more foreign ports. In Great Britain destruction of rats is only required when plague has occurred either in persons or in rats on board ship. With reference to cockle-borne enteric fever it is gratifying to find that the corporation has apparently succeeded in preventing the laying down of cockles taken from the Maplin sands in the sewage-polluted water of Leigh Creek, where they are placed to "cleanse" themselves from the gritty sand which collects in their branchiæ and other parts while on the sands. Some interesting analyses of Thames water from Teddington to the Nore have recently been made by the City analyst, but, as a matter of fact, they do not add much to the knowledge which we already possess as the results of chemical analyses made by Royal Commissions in former years and of the work done in a bacteriological sense by Dr. A. C. Houston for the present Royal Commission on Sewage Disposal and for the London County Council. The samples dealt with by Dr. Herbert Williams in his current annual report were all taken, in order to insure uniformity in comparison, during the last one and a half hours of ebb tide—i.e., during the period of greatest concentration. The samples show, what must obviously be the case, that the water coming over Teddington Weir is already polluted. The fact that it receives between Oxford and Teddington either directly or indirectly the sewage effluents of the valley of the Thames is sufficient to account for this fact and the remarkable circumstance connected with the occurrence is that the population of London drinks the water from this source, after filtration, with, in so far as water-borne diseases are concerned, almost, if not quite, absolute impunity. Between Teddington Weir and London Bridge the analyses show some increase in pollution, a fact which may be perhaps explained by the circumstance that the sewage of effluents of Richmond, Kew, and Sheen, as well as storm outfalls from the main intercepting sewers of the London County Council, discharge into this portion of the river. It is well to remember in connexion with these storm outfalls that in certain circumstances the liquid discharged therefrom may be almost crude sewage. At Greenhithe the river has received for the last five miles of its course the effluent from the Barking and Crossness outfalls—i.e., some 250,000,000 gallons daily—but ere Gravesend is reached the degree of pollution is only about the same as that found at Greenwich. It is stated that the effluent from the Leigh sewage outfall near Southend is much more impure than that from Barking, where, be it noted, precipitation and subsidence have alone been resorted to. Some details as to the installation at Leigh would have been instructive, as we seem to have read somewhere that a very considerable sum was spent upon a biological process. But one of the worst offenders of all the towns along the Thames estuary would appear to be Southend, where, according to the report before us, "crude sewage containing masses of human excrement was pouring out in great volume and the odour given off was extremely offensive." Moreover, "the stream of sewage could be distinctly traced for nearly a mile by the scum visible upon the surface of the water as well as by floating human excrement." The general conclusion at which Dr. Williams arrives is that, although there is a considerable amount of sewage entering the river Thames and river Medway, the general condition of the water within the district of the Port of London sanitary authority "cannot be considered as being in a state of serious pollution." It may be added, too, that Southend intends to purify its sewage at a cost of about £150,000. In the matter of the importation of food Dr. Williams states with reference to the large quantities of boned meat and casks of sausage meat that none of it could be determined to be unsound and consequently it had to be passed for human consumption, but he adds that in the case of meat which is cut up into small pieces there is no means of determining that it has not come from animals the subject of disease in some form or other, nor is there any sufficient guarantee that such meat has been derived from only those animals which in this country we are accustomed to devote to human food. Certain consignments of "blown" tins were condemned. Suggestions were made by Dr. Williams during the year for the amendment of the Merchant Shipping Act, 1906, such suggestions being mainly directed to the necessity for the plans of all ships built in any port being submitted to the medical officer of health of such port for approval as regards the adequacy of cubic space, &c. While we entirely concur in the desirability for improvement in this respect it appears to us that to submit the plans of vessels built in small ports to the local medical officer of health would lead to a great diversity in the requirements and that some definite and improved standards had better in the first place be laid down for general guidance.

Borough of East Ham.—Dr. G. Sowden does not regard the provision of a municipal milk depôt as the panacea for a high infantile mortality. Such institutions are useful, but for his part he would prefer to spend the money available upon the employment of a lady health visitor. As a result of investigation into infantile diarrhœa in East Ham during the months of August and September last it was found that 78 per cent. of such mortality occurred in children fed either wholly or partially on cow's or condensed milk, while out of 98 deaths from diarrhœa only five children were entirely breast-fed. Dr. Sowden thinks that it is insanitary house conditions which are very largely responsible for deaths from infantile diarrhœa. He points out that condensed milk as purchased is nearly sterile and that, if so, seeing that 40 per cent. of the deaths from diarrhœa are in children fed on condensed milk the pollution must have taken place in the home. He adds that as a tin of condensed milk usually lasts several days, and that during this time it is not infrequently left uncovered and exposed to dust and flies, its contamination is not a matter for surprise. What is necessary is the diminished use of condensed and cow's milk and more breast-feeding, together with greater cleanliness in the children and their surroundings. The remedy for infantile diarrhœa is, Dr. Sowden urges, the encouragement of breast-feeding and not, as is done by municipal milk depôts, the encouragement of artificial feeding. It should, however, be added that many of the existing milk depôts quite accept this position and only assent to the use of sterilised milk as a *pis aller* when the mothers cannot for one or another reason suckle their offspring. Elsewhere in his report Dr. Sowden furnishes some interesting data relative to the use of condensed milk. Such milk is divided into condensed whole milk—i.e., milk containing the whole of its cream—and condensed skim milk from which practically the whole of the fat has been removed. This latter is popularly known as "Starvation Brand." Investigations in East Ham showed that in eight

shops situated in the more populous parts very many dozen tins of condensed skim milk were sold weekly. We quite agree with Dr. Sowden as to the importance of educating the working-class mothers up to the standard of appreciating the real difference between these brands and also to the fact that the skim variety is often labelled in misleading fashion. No better means of education in this sense can be devised than the teaching of elementary hygiene to the older school girls and Dr. Sowden has, we are glad to see, written some notes on infant feeding for the use of teachers in the schools.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8940 births and 4442 deaths were registered during the week ending June 1st. The annual rate of mortality, which had steadily declined from 17·9 to 14·9 per 1000 in the eight preceding weeks, further fell to 14·5 in the week under notice. During the first nine weeks of the current quarter the death-rate in these towns averaged 16·0 per 1000, the rate in London during the same period being 15·5. The lowest annual death-rates in the 76 towns during the week were 3·5 in Hornsey, 5·3 in Rotherham, 7·1 in Handsworth (Staffs.), 7·6 in East Ham, and 7·8 in Croydon; in the other towns the rates ranged upwards to 20·2 in Oldham, 20·4 in Sunderland, 22·0 in St Helens, 25·7 in Bolton, and 35·3 in Middlesbrough. The 4442 deaths in the 76 towns showed a further decrease of 136 from the number in the preceding week, and included 474 which were referred to the principal infectious diseases, against 507 and 474 in the two previous weeks; of these, 201 resulted from measles, 111 from whooping-cough, 48 from diphtheria, 47 from diarrhœa, 45 from scarlet fever, and 22 from "fever" (principally enteric), but not any from small-pox. The deaths from these principal epidemic diseases were equal to an annual rate of 1·5 per 1000, the rate from the same diseases in London being 1·4. No death from any of these epidemic diseases was registered last week in Southampton, Norwich, Wolverhampton, Swansea, York, Devonport, or in six other of the 76 towns; the annual death-rates therefrom, however, ranged upwards to 3·0 in Tottenham, 3·3 in Portsmouth, 3·9 in Hanley, 4·3 in Sunderland, 5·2 in Grimsby, 9·1 in Bolton, and 9·2 in Middlesbrough. The 201 fatal cases of measles showed a further slight decline from the high numbers in the two preceding weeks; the death-rates from this disease ranged upwards to 2·7 in Sunderland, 3·0 in Portsmouth, 3·1 in Hanley, and 7·7 in Bolton and in Middlesbrough. The deaths from whooping-cough, which had declined from 176 to 116 in the four preceding weeks, further fell to 111 during the week under notice, the highest death-rates from this cause being 1·1 in Huddersfield, 1·2 in West Ham, Walthamstow, and Wigan, 1·3 in Salford, and 2·2 in Grimsby. The fatal cases of diphtheria, which had been 41 and 46 in the two preceding weeks, further rose last week to 48 and included 14 in London and three each in Bristol, Birmingham, and Sunderland. The deaths from diarrhœa, which had been 51 in each of the two preceding weeks, declined to 47 in the week under notice, the greatest proportional mortality being recorded in Walsall and St. Helens. Scarlet fever caused a death-rate of 1·4 in King's Norton, and "fever" a rate of 1·5 in Grimsby. No fatal case of small-pox was registered in any of the 76 towns; and no cases of this disease were under treatment in the Metropolitan Asylums Hospitals during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2658, 2679, and 2732 at the end of the three preceding weeks, had further risen to 2824 at the end of the week under notice; 437 new cases were admitted during the week, against 349, 363, and 382 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had declined from 412 to 230 in the eight preceding weeks, further fell to 192 last week, and were 20 below the corrected average in the corresponding weeks of the previous five years. The causes of 37, or 0·8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, West Ham, Newcastle-on-Tyne, and in 54 other of the 76 towns; the proportion of uncertified deaths, however, again showed a marked excess in Liverpool, Birmingham, Sunderland, and St. Helens.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 19·7 and 17·5 per 1000 in the two preceding weeks, further declined to 16·7 in the week ending June 1st, but exceeded the rate in the 76 English towns by 2·2. The rates in the eight Scotch towns ranged from 9·3 in Aberdeen and 12·0 in Dundee to 18·6 in Glasgow and 20·5 in Greenock. The 580 deaths in the eight towns showed a decrease of 27 from the number in the preceding week, and included 91 which were referred to the principal epidemic diseases, against 112 and 92 in the two preceding weeks. These 91 deaths were equal to an annual rate of 2·6 per 1000, which exceeded by 1·1 the rate from the same diseases in the 76 English towns; they included 38 which were referred to whooping-cough, 24 to "fever," 14 to diarrhœa, seven to measles, six to diphtheria, two to scarlet fever, and none to small-pox. The 38 fatal cases of whooping-cough showed a slight decline from the numbers in recent weeks, and included 26 in Glasgow, seven in Edinburgh, and two each in Paisley and in Greenock. The deaths referred to different forms of "fever," which had been 36, 41, and 28 in the three preceding weeks, further declined to 24, of which 20 occurred in Glasgow, two in Leith, and one each in Edinburgh and in Aberdeen; 17 deaths were certified as cerebro-spinal meningitis in Glasgow, two in Leith, and one in Edinburgh. The fatal cases of diarrhœa, which had been seven and nine in the two preceding weeks, further rose to 14 in the week under notice, and included seven in Glasgow, two in Edinburgh, and two in Dundee. Of the seven deaths from measles four were registered in Edinburgh and two in Glasgow, while of the six fatal cases of diphtheria three occurred in the latter and two in the former city. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had declined from 127 to 83 in the four preceding weeks, were 82 in the week under notice, and were 13 below the number in the corresponding week of last year. The causes of 23, or 4 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; the proportion of uncertified deaths in the 76 English towns during the same week did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 26·7 and 25·8 per 1000 in the two preceding weeks, further declined to 23·1 in the week ending June 1st. During the first nine weeks of the current quarter the death-rate has averaged 26·8 per 1000; the mean rate during the same period did not exceed 15·5 in London and 17·7 in Edinburgh. The 173 deaths of Dublin residents registered during the week under notice showed a decline of 20 from the number in the preceding week, and included 13 which were referred to the principal epidemic diseases, against seven and 17 in the two preceding weeks; of these, eight resulted from whooping-cough, four from measles, and one from "fever," but not any from small-pox, scarlet fever, diphtheria, or diarrhœa. These 13 deaths were equal to an annual rate of 1·7 per 1000, the rate during the same week from the principal epidemic diseases being 1·4 in London and 2·6 in Edinburgh. The fatal cases of whooping-cough, which had been eight, four, and ten in the three preceding weeks, declined again last week to eight; while the fatal cases of measles numbered four in the week under notice, having been six, one, and six in the three preceding weeks. The 173 deaths from all causes included 25 of children under one year of age and 55 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons considerably exceeded the number in the previous week. Five inquest cases and six deaths from violence were registered; and 76, or nearly 44 per cent., of the deaths occurred in public institutions. The causes of four, or 2·3 per cent., of the deaths in Dublin last week were not certified; only one death in London was uncertified, while in Edinburgh the proportion was 6·8 per cent. The 156 deaths registered in Belfast during the week under notice included 14 which were referred to cerebro-spinal fever or cerebro-spinal meningitis.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. K. Robinson to the *New Zealand*, on recommissioning; W. Hackett to the *Goliath*, on recommissioning; A. G. W. Bowen to the *Canopus*, on recommissioning; and E. St. M. Nepean to the *Niobe*. Staff Surgeons: M. L. B. Rodd and A. J. Laurie to the *Mars*, on recommissioning. Surgeons: W. F. Archibald to the *Goliath*; T. A. Smyth to the *Canopus*, on recommissioning; J. C. F. D. Vaughan to the *Hebe*; A. C. Renwick to the *New Zealand*, on recommissioning; E. B. Kenny to the *Indus*; and J. O'Hea to R.M.A., Eastney.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Henry John Hadden has been placed on the Retired List, at his own request (dated June 2nd, 1907).

ROYAL ARMY MEDICAL CORPS.

Captain W. H. S. Nickerson, V.C., lately serving in West Africa, has been appointed to the Dublin district for duty.

INDIAN MEDICAL SERVICE.

The services of Captain S. H. L. Abbott have been placed at the disposal of the Government of India for plague duty in the Punjab.

The King has approved of the transfer to the temporary half-pay list of the under-mentioned officers: Captain Stewart Ranken Douglas (dated Sept. 15th, 1905); and Captain Harold Budgett Meakin (dated March 23rd, 1907).

The King has also approved of the retirement from the service of the undermentioned officers: Lieutenant-Colonel Osborne Henry Channer (dated April 15th, 1907); Major Wilfred Ernest Arbuthnot Armstrong (dated March 12th, 1907); and Lieutenant John Henry Gill (dated March 27th, 1907).

VOLUNTEER CORPS.

Rifle: 6th Volunteer Battalion the Royal Scots (Lothian Regiment): Arthur Julian de Spiganovicz to be Surgeon-Lieutenant (dated March 1st, 1907). 2nd Volunteer Battalion the East Lancashire Regiment: Surgeon-Major W. Deans is granted the honorary rank of Surgeon-Lieutenant-Colonel and resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 1st, 1907). 1st Cadet Battalion the King's Royal Rifle Corps: Acting Surgeon J. H. Reynolds, V.C. (Lieutenant-Colonel, retired pay), resigns his appointment (dated April 22nd, 1907). 1st Dumbartonshire Volunteer Rifle Corps: Surgeon-Lieutenant F. Gracie to be Surgeon-Captain (dated April 22nd, 1907).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Cadet Corps (St. Michael's, Woolwich) attached to the Eastern Command: Woolwich Companies: The announcement of the resignation of his commission by Captain J. P. Ekins is cancelled.

ROYAL ARMY MEDICAL CORPS REGULATIONS.

New regulations for admission to the Royal Army Medical Corps have now been issued. Candidates who have been specially employed in consequence of a national emergency, either as an officer or in a position usually filled by an officer, will be allowed to reckon such service towards retired pay and gratuity, and if over the regulation limit of age at the date of commencement of the competitive examination shall be permitted to deduct from their actual age any period of that service if such reduction will bring them within the age limit.

THE KING'S LEVEE: HEROES OF THE INDIAN MUTINY.

At the Levée held at St. James's Palace on June 3rd by the King a number of naval and military officers and civilians who served in the Indian Mutiny were in attendance in order that His Majesty might mark the fiftieth anniversary of that campaign by receiving survivors. Field-Marshal Lord Roberts in introducing the survivors of the siege of Delhi did so as the leader and senior of them. The Mutiny campaign, it may be mentioned, yielded the greatest number of Victoria Crosses of any war, the total gained being 182, as against 111 for the Crimea and 78 for the last South African war. The following medical officers who took part in the siege of Delhi and the defence and relief of Lucknow attended the Levée: Deputy Surgeon-General J Fairweather, Deputy Surgeon-General C. A. Innes, Surgeon-Major H. M. Greenhow, and Brigade-Surgeon H. E. Busteed, C.I.E.

THE ORDER OF ST. JOHN OF JERUSALEM.

The annual commemoration service of the Order of St. John of Jerusalem in England will be held at St. John's Church, Clerkenwell, on June 24th, at 2.15 P.M. The service will be followed by a general assembly of members and associates of the Order at St. John's Gate.

Correspondence.

"Audi alteram partem."

UNION OF MEDICAL SOCIETIES.

To the Editors of THE LANCET.

SIRS,—The following societies have decided to amalgamate, viz.:—

	Established.
Royal Medical and Chirurgical Society	1805
Pathological Society of London	1846
Epidemiological Society	1850
Odontological Society of Great Britain	1856
Obstetrical Society of London	1858
Clinical Society of London	1867
Dermatological Society of London	1882
British Gynæcological Society	1884
Neurological Society	1886
British Laryngological, Rhinological, and Otological Association	1888
Laryngological Society of London	1893
Dermatological Society of Great Britain and Ireland	1894
British Electrotherapeutic Society	1901
Therapeutical Society	1902

The Otological Society of Great Britain and Ireland (1899) will give its decision on June 10th. His Majesty the King has graciously granted the petition of the above societies that the amalgamation shall be known as the Royal Society of Medicine. The new Society will be housed at 20, Hanover-square. The balance of assets over liabilities is more than £37,000. The estimated balance of income over expenditure is about £1000. This estimate is based on subscriptions actually promised. As answers have yet to be received from 700 persons entitled to join the new society, and as many members of the profession who are not members of the amalgamating societies and therefore are not entitled to be proposed for election until the society has been constituted, have expressed their desire to join, the balance of income over expenditure will be increased. The first meeting of the Fellows of the Royal Society of Medicine will be held at 20, Hanover-square, on Friday, June 14th, at 5.30 P.M. for the purpose of adopting by-laws and electing the council and honorary officers.

We are, Sirs, yours faithfully,

ARTHUR LATHAM.
HERBERT S. PENDLEBURY.
Honorary Secretaries of the Committee of Representatives of the Societies.

June 4th, 1907.

To the Editors of THE LANCET.

SIRS,—The recent amalgamation of several of the medical societies under the title of the Royal Society of Medicine is an event with regard to which many members of the profession will rejoice. It also seems to me to be an occasion for the adoption of certain small reforms the desirability of one of which at least has been forcibly impressed upon me by the receipt of a circular of a society which will henceforth form one of the sections of the Royal Society of Medicine. In this circular a list is given of names proposed by the council of the society for election as officers and members of council of the section for the year 1907–08. In this list is noticeable what would appear to be an invidious distinction—that is to say, that amongst the names of 29 gentlemen one alone appears without any title at all. On further perusing the list two other well-known surgeons are also found to be destitute of medical titles, though in this case evidence is given of their having received honours—eminently well won—

from the King. The explanation of the whole matter is evidently that university titles, medical and surgical, are alone recognised. Surely this is not desirable. What have the Presidents of the various Colleges of Physicians and Surgeons to say on the matter? (If I remember rightly a similar course is pursued with regard to the official issue of the names of the successful candidates for admission into the Royal Navy and Army Medical Services.) It is possible that a member possessing the qualifications of F.R.C.S. Eng. and M.D. Brussels would be designated in these lists by the latter and not by the former title, which, without wishing in any way to disparage the examination for the M.D. Brussels, seems to be absurd. It is to be hoped that the Royal Society of Medicine will inaugurate a little more liberal and a little less invidious spirit. Let me add that I have no personal interest whatever in the matter, having, in fact, been educated at a university and not possessing a Fellowship of any of the Royal Colleges.

I am, Sirs, yours faithfully,

London, June 3rd, 1907. LIBRA.

THE NEW VACCINATION ORDER.

To the Editors of THE LANCET.

SIRS,—The Local Government Board has just issued a General Order about vaccination to "boards of guardians, public vaccinators, and all others whom it may concern," which, when working in conjunction with Mr. Burns's new Vaccination Bill, which passed the second reading in the House of Commons on Friday, May 24th, virtually means the repeal of the Vaccination Acts. Let us see what will be the effect of this new Order and this new Bill. Let us take the new Bill first, which when it becomes law will allow the so-called conscientious objector to simply make a statutory declaration before a commissioner for oaths, or justice, and pay 1*s.* or 1*s.* 6*d.*, and thus be exempt from the Act. But this is not all. For when a baby is three months old the vaccination officer, according to the new Order, must notify the parent of the date when the child will be four months old, and tell him that if he does not receive a legal exemption or a certificate within seven days from that date, the public vaccinator will be instructed to call and offer to vaccinate. This means that the vaccination officer is to write and warn the people that they have only another month in which to obtain their exemption, and so they had better bestir themselves. In other words, the vaccination officer is to stultify himself by warning the people not to do what he was placed there originally to enforce. Now the conscientious objector is really a very small minority, although perhaps somewhat a noisy one, but he does not give any real trouble, and in spite of him the people are to-day better vaccinated than ever they have been. There are, however, a great number of people, less earnest than the conscientious objector, "who do not believe in it," and who "think it a shame to cut the poor little mite about," and a very great number who think it "nonsense" and a "lot of trouble." These people take it as a matter of course and submit, but when shown how easy it is to become exempted they will willingly make the declaration and so save themselves trouble and thus become a danger to the rest of the public. A good many of the public believe that small-pox has been, and can be, kept away by sanitation, &c. Now, if this were the case scarlet fever, which is a very similar disease as regards its infectious properties, would be as rare a disease as true small-pox. This is, however, very far from being the case, and epidemics of scarlet fever are about as common now as ever they used to be.

In sending out the new Order the Local Government Board incloses a circular in which it, in a way, apologises for introducing the Order. It excuses itself chiefly on the ground of economy, and yet in the same breath it says that the remuneration was not excessive. The letter reads:—

> The committee found that, apart from the great increase in the number of operations performed since 1898, the principal factor in the increased cost of public vaccination has been the increase in the fees payable to public vaccinators. But, as the committee pointed out, some increase in the remuneration of the public vaccinators was inevitable, in view of the additional duties which were imposed upon them by the provisions of the Act and of the Vaccination Order, 1898. The committee thought that having regard to the work required the remuneration for primary vaccination since the Act of 1898 came into operation had in many cases not been excessive.

Yet, in spite of all this, it has decided to reduce the fees for primary vaccination by half. This, however, is only a minor point when viewed from the standpoint of public health. It does not appear to me that it will matter greatly to the public vaccinator whether his fees are big or little, as there will be precious few to collect under this *régime*.

There can only be one result if this Order is long in force or the Bill becomes law, and that is that within the next decade the country will be put to the expense of a real small-pox epidemic. But still we must submit, as it is one of the many mandates with which the present Government seems to be over-burdened.—I am, Sirs, your obedient servant,

Chiswick, May 28th, 1907. ARTHUR D. DUCAT, M.B. Lond.

SANITARY AUTHORITIES AND SANITARY OFFICERS.

To the Editors of THE LANCET.

SIRS,—Dr. J. H. Garrett's able and expert critique of modern sanitary government in THE LANCET of May 25th, p. 1447, shows up the defects of the present system. There is, however, another side to the question. The essence of British government is constitutional democracy; let the people rule themselves and find out what they want and find out how to get it. If they blunder on the way no matter; experience teaches. So it is in the matter of public health. Let the people wallow, so says our Constitution, in their insanitary streets and houses, their polluted water- and food-supply, their filthy habits, and general ignorance. They will get their experience; they will compare it with that of their neighbours who take thought; they will have the power to adopt such methods as are proved good and to reject such as are proved bad. They have suffered meanwhile; the helpless in their midst have suffered; but by these very sufferings, altruistic and personal, their responsibility and powers have been realised, and they know they have only themselves to blame. The result is scientifically a compromise—an essentially British institution. Take Dr. Garrett's second alternative—a great central department of government with plenary executive powers over the whole country—a sanitary despotism. Even were this despotism benevolent it would take from the local laity all responsibility and all stimulus to help; it would throw on the central department the burden of each local grievance; it would give fuel for a political conflagration of the most dangerous character. The ten years' story of Indian plague has taught this lesson all too well. The result is lethargy or revolution.

But Dr. Garrett's first suggestion, a revised version of the findings by the Select Committee on the Housing Bill, is more constitutional. As sanitary authority, the committee proposes county councils, Dr. Garrett proposes more uniform districts with committees formed out of existing district councils. I would propose city and county councils, the latter standardised down to areas of a quarter to a half million inhabitants, with local sanitary committees corresponding to the managers of schools. The committee again focus attention on the councils, Dr. Garrett on the officers, and Dr. Garrett would give the appointment of local officers to the Local Government Board. But the Constitution demands that they who pay the piper shall call the tune and that local officers shall be locally appointed. I would suggest appointments by the city and standardised county councils out of a standing list of candidates approved by the Board. Dr. Garrett considers the local council as of secondary importance; I beg to differ. The medical officer of health may on occasion be the leader; he should, as a rule, be the guide. The power and responsibility must always rest with his council and he will effect his object best by convincing them of the lessons of adversity in their own or their neighbours' experience rather than by seeking powers to lead where they will not follow.

Official progress must, then, be stimulated by allowing complaints to be made over the heads of the sanitary authorities to the Local Government Board; by publishing broadcast and outspokenly for the United Kingdom—as by us for our counties—the results of each year's work, not sparing the criticism afforded by figure and fact; and by a very large increase in the Local Government Board inspectorate who should be able to keep themselves in actual touch with the sanitary administration of every part and give sympathy and personal support to every medical officer of health in his now isolated "Aussichtsturm." We are far too much tempted to think of our district as a physician thinks of his patient and

consider that the treatment and responsibility for the result are in our hands. This error is a stone wall against which many medical officers of health run their heads and those of their pupils. I beg to raise a voice for constitutional democracy and its application to the sanitary branch of our profession. I am, Sirs, yours faithfully,

FRANCIS FREMANTLE.

Chester-street, S.W., May 25th, 1907.

PRESENT MEANS OF COMBATING SLEEPING SICKNESS.

To the Editors of THE LANCET.

SIRS,—In the admirable article under the above heading in THE LANCET of Feb. 2nd last by Dr. A. Kinghorn and Dr. J. L. Todd there is a point which, I think, may fairly be raised.

In reference to gland palpation it is said: "We have therefore an exceedingly simple method of detecting early cases of human trypanosomiasis which may be applied by almost any intelligent person." This is true as it stands, but it needs the qualification that the stage previous to considerably enlarged glands may well permit the passing of cases even in the hands of the profession. This is rendered the more difficult by the fact that a large percentage of natives from uninfected districts are found on palpation to have slightly enlarged neck glands (viz., 43 per cent. in my hands). I am, Sirs, yours faithfully,

SHEFFIELD NEAVE, M.R.C.P. Lond.

Kambové, Congo Free State.

PULMONARY COLLAPSE AND TUBERCULOSIS: A SUGGESTION FOR PHYSICAL EXAMINATION OF THE THORAX.

To the Editors of THE LANCET.

SIRS,—A short article by Dr. William Huggins on Pulmonary Atelectasis in Adults recently designed to demonstrate that if percussion of the chest precedes palpation it is not unusual to find temporary collapse at the apex of one or other lung. At the time this paper appeared the fact was a familiar one to myself since for many years I had been accustomed to percuss the chest before deep breathing was performed, but so little, if any, attention has been paid to this point and its importance is so great that I am emboldened to bring it forward once again.

The facts are as follows. In a certain proportion of healthy chests examined during quiet breathing and before deep respirations have been taken the apex of the lung is found temporarily collapsed. The signs of this collapse are generally impairment to percussion and feeble breath sounds, these signs disappearing on deep breathing with the production of the dry crackling sounds of expanding lung. The area affected is generally the supraclavicular fossa in front, extending over the shoulder to the supraspinous fossa behind. In more marked cases the collapse may remain for a while in spite of deep breathing and may give rise to deficiency of movement at the affected apex. I have never seen the condition in children (in whom apical phthisis is rare), but closely analogous to it is the temporary collapse of the middle lobe which sometimes occurs in childhood. This, in my experience, is always the accompaniment of bronchial catarrh; it generally persists for weeks and sometimes, I think, becomes permanent and leads to bronchiectasis of the affected lobe. The apical collapse of adults is not necessarily the result of bronchial catarrh, it often occurs in healthy lungs. An estimation of its frequency is very difficult to make, but I believe it may be found in at least from ¼ to 1 per cent. of the lungs examined in a hospital clinic.

And now, granting its occurrence, What is its importance? Firstly, it may give rise to errors of diagnosis. Those who palpate before they percuss may find temporary limitation of movement at one apex which may induce an unwarranted suspicion of phthisis. Those, too few in number, who percuss first will find an impairment at one apex whose disappearance after deep breathing may puzzle them unless they are familiar with this condition. The practitioner who omits to demand deep breathing during palpation may find that the lung is not expanded when he comes to auscultate, and crepitations are heard which closely simulate those of early phthisis. These may be temporarily heard in some cases even after deep respiration.

The second point of importance in this apical collapse is the relation it may bear to the localisation of apical phthisis. In a most interesting and instructive paper read by Dr. Arthur Keith before the London Hospital Medical Society in October, 1903, the question, "Why does phthisis attack the apex of the lung?" was discussed from the anatomical standpoint. Dr. Keith shows clearly, among other valuable facts, that the apex of the lung is the part most difficult to ventilate, only slight direct expansion being possible through movements of the first and second ribs, the main expansion being indirect and brought about by movements of the diaphragm. Dr. Keith insists that the diaphragm becomes functionally less active as adult age is reached; he points out that in most of us the lungs are only used to the minimum of their capacity and, he says, "when a shutting-down process sets in the apex is the first to feel it." These contentions of his as to the inefficient expansion of the apex of the lung in adult life are borne out clinically by the occurrence of collapse as already described, and, since this is the main point in which the apex differs from the remainder of the lung, we may conclude that it has much to do with the apical deposition of tubercle. Deficient expansion means sluggish blood and lymph circulation.

And now, having considered shortly the bearings of pulmonary apical collapse on the diagnosis and etiology of phthisis, it behoves us to inquire how our knowledge on these points may be most usefully applied. First, I would like to suggest the advantage of modifying the order of our examination of the lungs. I am persuaded myself, and would suggest it to the consideration of others, that the order—inspection, percussion, palpation, is preferable to the old order—inspection, palpation, percussion. Palpation must be accompanied by deep respiration and I am persuaded that it is best to percuss before this and, if necessary, afterwards as well. The second lesson I would impress upon myself and others is the importance in young adult life of overcoming this tendency to apical collapse and through it to apical phthisis. To this end the lungs should be ventilated at least twice daily by deep breathing and, in those leading a sedentary life, I can think of no more convenient means of accomplishing this purpose than the night and morning use of exercisers or light dumb-bells.

I am, Sirs, yours faithfully,

CLIVE RIVIERE, M.D. Lond., M.R.C.P. Lond.,
Senior assistant physician, East London Children's Hospital, Shadwell; physician to out-patients, City of London Chest Hospital, Victoria-park, E.

June 3rd, 1907.

THE ESTIMATION OF SUGAR.

To the Editors of THE LANCET.

SIRS,—The estimation of sugar by means of a colour test, as described on p. 1446 of THE LANCET, is not new; but it is of great value, as I have proved by a considerable experience of it. The method was introduced many years ago by Sir William Gowers and will be found duly incorporated in the third edition of my "Index of Symptoms," section 679.

I am, Sirs, yours faithfully,

R. W. LEFTWICH, M.D. Aberd.

Buckingham-gate, S.W., June 3rd, 1907.

CALCIUM CHLORIDE ON ROADS.

To the Editors of THE LANCET.

SIRS,—In your issue of May 25th, under the heading "The Chemicalised Road," you comment on the use of calcium chloride for dust prevention and give expression to fears as to the possible injurious effect of the product. We have used this article ourselves during the past 15 years for the prevention of dust on roads in our own neighbourhood and have never experienced any of the ill effects you name. When motor-cars took possession of the high roads in enormous numbers and the dust became an intolerable nuisance we made careful experiments to ascertain what effect, if any, a weak solution of calcium chloride would have on the feet of animals, rubber tyres, metals, clothes, the skin, and so on. We found it had no injurious effect and consequently strongly advocated its use by the public.

We wish to emphasise the fact that we are not dealing with a strong solution of calcium chloride, but with one sufficiently weakened to keep a road free from dust, and with

regard to the suggestion that it may attack iron and other metals, as our calcium chloride is absolutely free from acids, its action on metals is no more deleterious than that of a solution of common salt, which, for generations, has been used without harm on roads in the salt districts. Calcium chloride is a neutral substance, contains no tar, oil, grease, or other objectionable matter, and not only does not injure but positively preserves the surface of a road. The article in your journal has been copied into other public prints, and, unfortunately, has had the effect of making some people nervous about using calcium chloride on roads. In common fairness to the public, who suffer so much from the ill effects of dust, we trust you will give publicity to the facts mentioned in this letter.

I am, Sirs, yours faithfully,
For Brunner, Mond, and Co., Limited,
THOMAS H. FORGAN,
Managing Director.

Northwich, June 1st, 1907.

*** It is quite clear that the results which we mentioned might and would occur if the solution were of sufficient strength—that was surely implied in the article.—ED. L.

THE LESSONS OF THE OUTBREAK OF SMALL-POX AT METZ.

To the Editors of THE LANCET.

SIRS,—Much capital is being made by the National Anti-vaccination League at the present time out of the fact that there has recently been some small-pox in Metz, Germany. The *Vaccination Inquirer* for May contains a long article headed in huge type, "Small-pox in the German Empire—Collapse of the Argument from Germany." The argument is this: Germany is a well-vaccinated country; there is small-pox in Germany; therefore vaccination is useless.

As you are aware, Sirs, no official report of the outbreak at Metz has yet been published in this country and the *Vaccination Inquirer* gives no information from which it would be possible (assuming its veracity) to draw any conclusions as to the protective effect of vaccination. I therefore wrote privately to Dr. Pawolleck, State medical officer at Metz, asking him for such information. I have received a reply from him which contains the following facts. 1. Since the end of July, 1906, there have been in Metz and the district 164 cases of small-pox, of which 37 have died. 2. No case has occurred since May 12th, 1907. 3. Of vaccinated children under ten not one has been attacked. 4. Of vaccinated children up to 14 one was attacked and had the disease very lightly and very few pock marks were left. 5. Of unvaccinated children up to 14, 22 were attacked, all of whom were very ill, and 12 died. 6. In the town of Metz itself (which Dr. Hadwen of Gloucester has recently described as "the hot-bed of vaccination tyranny") not one child was attacked. 7. In the garrison and outposts, consisting of 24,000 men, no case of small-pox occurred.

It must be remembered that Metz is a frontier town, which may be assumed, in the absence of evidence to the contrary, to have a considerable French population, and to have extensive intercourse with the other side of the frontier. Also that the German vaccination law was passed in 1874, so that all German subjects who are now over 50 years of age had passed their vaccination and revaccination ages before the law was passed and may therefore all be unvaccinated.

I am, Sirs, yours faithfully,
J. D. RAWLINGS.

Dorking, June 5th, 1907.

THE PORTSMOUTH MEMORIAL TO CHARLES DICKENS.

To the Editors of THE LANCET.

SIRS,—It is a well-known fact that Charles Dickens, one of the greatest glories in English literature, whose imperishable writings will ever remain among the world's most precious possessions, strictly desired that no statue should ever be erected to his memory. The wish of such a man, however unreasonable it may appear to be, is bound to be respected for all time, but the borough of Portsmouth, where Charles Dickens first saw the light, has at last resolved to raise a permanent memorial to its illustrious townsman in the shape of a cot in the hospital situated in the parish in which he was born. Failing a statue, no happier object could be conceived than this. To accomplish so noble an aim, however, it will, I hear, be necessary to raise the sum of £500. The first £100, and a little over, is already assured, among the subscribers being some of the most distinguished names in the country. There surely ought to be no great difficulty in raising the remainder of the sum required, and I deem it a special privilege and honour to be permitted by the chief promoter of this memorial to make, through the medium of your influential journal, an earnest appeal to every Dickens lover in the land to further this noble object by sending a subscription, large or small, to Mr. C. Louis de Wolff, the indefatigable honorary secretary of "The Dickens Birthplace Fellowship," 73, Laburnum-grove, Portsmouth.

I am, Sirs, yours faithfully,
ALGERNON ASHTON.

St. John's Wood, N.W., June 3rd, 1907.

LARGE VESICAL CALCULI.

To the Editors of THE LANCET.

SIRS,—Mr. H. Littlewood's letter regarding large vesical calculi which was published recently in THE LANCET recalls to my mind a case that came under my notice some three years ago in which a large stone was removed from the bladder by the suprapubic operation. The calculus when dry weighed 16½ ounces. I was able to follow up the history of the case for 12 months, but then lost sight of the man. A year after the operation he was in perfect health and had no trouble with his bladder. It is of interest to note that it was only a week or two prior to the operation that the calculus caused him inconvenience such as to interfere with his work.—I am, Sirs, yours faithfully,
J. A.

June 1st, 1907.

THE GERMAN CONGRESS OF INTERNAL MEDICINE.[1]

(FROM OUR BERLIN CORRESPONDENT.)

THE German Congress of Internal Medicine was held at Wiesbaden from April 15th to 18th, Professor VON LEYDEN (Berlin) being in the chair.

The Treatment of Neuralgia.

Professor SCHULTZE (Bonn) described neuralgia as a disease in which fits of pain of great intensity developed within the sensory nerves and followed their track. The nerves might sometimes show certain pathological alterations, but as a rule such lesions were absent. He enumerated the six following causes of neuralgia. 1. Mechanical action, such as compression and tearing. To this category belonged the adhesions between the nerves and the scar which occurred in the stump left after an amputation. It was remarkable that malignant growths, notwithstanding the adhesions associated with them, seldom produced neuralgia. Gallstone colic and intestinal colic were at present believed to be caused by tearing of the nerves of the mesentery and gall-bladder. 2. Neuritis and polyneuritis. These conditions were exemplified in patients suffering from tabes dorsalis, rheumatism, gout, diabetes, infectious diseases, and alcoholism. Neuralgia when occurring as a complication of malaria and of chills was probably connected with neuritis. 3. Psychical influences, hysteria, and neurasthenia. This category included neuralgia due to occupational neuroses and to over-exertion; degeneration or injury of the affected nerve might perhaps be caused by a toxin produced by over-exertion. 4. Toxins either entering the body from outside or produced within it. Neuralgia associated with constipation was an example of this kind. 5. Arteriosclerosis. The connexion between this condition and neuralgia was, however, not yet explained. 6. Anæmia and chlorosis. In these diseases psychical influences were the determining factors of the neuralgia. Professor Schultze said that the pathological anatomy of neuralgia was very imperfectly known as it was impossible to examine the nerves throughout their whole length. In rheumatic sciatica red discolouration of the nerve and slight adhesions have been sometimes observed together with obliteration of the small vessels within the nerves. In neuralgia following amputations Professor Bardenheuer has met with œdema

[1] For this report we wish to tender our sincere thanks to the editor of the *Deutsche Medizinische Wochenschrift*, through whose courtesy it has been forwarded to us by our Berlin correspondent.

and hyperæmia and Professor Witzel has found cicatrices adherent to the bone. With regard to the symptomatology, Professor Schultze said that points which were painful on pressure might either be present in neuralgia or not; it was necessary to test not only the classical points but also their surroundings and to avoid the use of too strong pressure at the examination. The painful points must not be found by questioning the patient but by observing the occurrence of responses, such as movements of defence, the expression of the face, or even the pulse-rate. Hyperæsthesia or anæsthesia of the skin was often a symptom of neuritis. The diagnosis of genuine neuralgia, such as neuralgia of the fifth nerve or sciatica, was easy; pathological conditions which were very like neuralgia were the meralgia paræsthetica in the fascia lata described by Bernhard, the Achillodynia, which was caused by inflammation of the bursa mucosa situated in the neighbourhood of the tendo Achillis, tarsalgia and metatarsalgia in the metatarso-phalangeal joint of the fourth toe. Sciatica might be confounded with coxa vara, but the diagnosis between them might be made by radiography; other diseases from which it must be distinguished were morbid conditions of the sacrum, flat-foot, and recurrent lameness. In bilateral sciatica,-disease of the cauda equina might be present. Neuralgia of the trigeminus nerve was often a symptom of catarrh of the frontal sinus, especially when cerebral and meningeal symptoms were observed. Hysterical and neurasthenic neuralgia differed from the other forms: (1) by the absence of the classical points sensitive to pressure; (2) by the symptoms depending on psychical causes; (3) by recovery following the use of the most dissimilar remedies; and (4) by the pains not following the track of the nerves. Methods of treatment might be divided into the following four classes: 1. The administration of drugs, such as aconitine, strychnine, &c. 2. Physical methods, such as the application of electricity and heat. Using hot air, Professor Bier successfully treated 12 out of 20 cases which had been sent to him to be operated on. Stretching of the nerve merited consideration in cases of perineuritic adhesions, although this operation was sometimes followed by paralysis. 3. Injections of morphine, aconitine, water, air, antipyrine, or methylene blue into the nerve. Dr. Schlösser's method of injections of alcohol has proved successful in four cases under Professor Schultze's care. 4. A surgical operation when all other means had failed. This consisted in a resection of the ganglion as simply cutting the nerve was liable to be followed by relapses. Professor Bardenheuer has completely relieved sciatica in five cases by removing the nerves from contact with bone and embedding them in soft tissue.

Dr. SCHLÖSSER (Munich) read a paper on the treatment of neuralgia by injections of alcohol. He said that injections of alcohol of 70 or 80 per cent. strength produced a degeneration of the nerves the effect of which was that they became absorbed until only the neurilemma remained. The injection must be made near the point of origin of the nerve, so that as much as possible of the substance of the nerve might be reached. In sensory nerves repeated injections, varying in amount from two to four grammes, must be made; in motor nerves small quantities of alcohol must be injected at intervals of about five minutes. Mixed nerves must be treated like motor nerves, but more energetically. He then gave a detailed account of an injection in a supposed case of neuralgia of the trigeminus nerve. The improvement, as a rule, continued for about a year and the injections must then be repeated if required. When it was doubtful which was really the affected nerve the treatment must be applied to more than one nerve. The use of a general anæsthetic should be avoided during the injection, as the pain indicated the proper point for the injection. Facial paresis might come on after the injections and Dr. Schlösser had seen one case of paralysis of the facial nerve from which, however, the patient recovered in less than three months. Limitation of the motions of the jaws might be produced by the growth of connective tissue between the masseter muscles as a sequel to the injection and might have to be treated by fibrolysin or by massage. He had had under his care 123 cases of neuralgia of the trigeminus nerve and among these a relapse did not occur on an average until after ten months. Among 38 cases of sciatica no relapse occurred in 36 cases; in other patients who were successfully treated without relapse the neuralgia existed in the occiput (16 cases), in the arm (eight cases), in the intercostal spaces (one case), and in an amputation stump (two cases), while in two cases it was associated with tabes dorsalis. Of 11 cases of clonus of the facial nerve nine relapsed after a period varying from three to seven months. Krause's operation gave better results but its mortality was high.

Dr. LANGE (Leipsic) recommended in sciatica the injection of a solution containing 1 per cent. of eucaine and 0·8 per cent. of sodium chloride.

Professor MINKOWSKI (Greifswald) mentioned a case in which sciatica was successfully treated by intraspinal injections of stovaine.

Professor FINKELBURG (Bonn) said that he had made experiments in which alcohol, sodium chloride, cocaine, and other compounds were injected into the substance of the nerve, with the result that paralyses occurred which did not make their appearance when the fluid was injected in the neighbourhood of the nerves. He was of opinion that the majority of observers who have obtained good results from such injections had made them not into the nerve itself but in the neighbourhood of it.

Professor KRAUSE (Berlin) admitted that his operation (the resection of the ganglion of Gasser) was still rather dangerous, the mortality being eight out of 56 cases, but it was the only remedy known in obstinate cases.

Professor BRIEGER (Berlin) reported the results obtained in his hydrotherapeutic institute, where 80 per cent. of the cases of neuralgia recovered.

Dr. SCHILLING said that he had had considerable success by the production of passive congestion according to the method of Professor Bier.

Professor VON NOORDEN (Vienna) said that patients suffering from neuralgia should in the first stage be kept in bed.

Professor SCHULTZE, in concluding the discussion, supported Professor von Noorden's opinion, especially as regards the treatment of sciatica.

The Frequency of Tuberculosis.

Dr. NAEGELI-NAEF (Zürich) said that he had on a former occasion quoted statistics based on necropsies which tended to show that 97 per cent. of the adult population suffered from tubercle to some extent. In opposition to this view it has been argued (1) that in other places a much smaller percentage of tuberculosis was found; (2) that it was not possible to infer the frequency of tuberculosis throughout the population from the number of bodies found to be tuberculous at necropsies; and (3) that in the statistical returns every case of induration has been registered as tuberculosis. Dr. Naegeli-Naef in reply to these objections pointed out that other observers in estimating the proportion of tuberculous individuals among the general population had arrived at results varying from 89 to 94 per cent., which were therefore not far removed from his own estimate. The presence of tuberculosis was completely proved in all the cases which were entered in his statistics as tuberculous.

The Distribution of the Tubercle Bacillus in Tuberculous Subjects.

Professor LIEBERMEISTER (Cologne) said that in examining the bodies of tuberculous patients who had died without general miliary tuberculosis he had found that guinea-pigs became tuberculous when inoculated with the blood or with portions of organs which under the microscope did not show any tuberculous lesion. These organs and the blood must therefore have contained highly virulent tubercle bacilli. This was so in the case of the kidneys, the heart muscle, the nerves, and the veins. This circumstance seemed to show that the tubercle bacillus has a wider distribution throughout the body than has hitherto been supposed.

Pathology of the Œdema of Bright's Disease.

Dr. SCHLAYER (Tübingen) said that he had examined the kidneys after the administration of vaso-constrictor and vaso-dilator compounds respectively. The administration of uranium give rise to the same morbid condition as occurred in poisoning by corrosive sublimate—namely, tubular nephritis. Under doses of a uranium salt varying from 0·1 to 0·3 gramme the normal secretion of urine was arrested, but it was resumed on the administration of diuretics, to be again stopped by the administration of sodium chloride. The essential factor was the nature of the lesion of the renal vessels which in nephritis produced by uranium caused a decrease of the permeability of the kidney, whereas in other forms of nephritis it caused an increase of the permeability. In order to determine the relation of these phenomena to the production of œdema, the

subjects of experiment were copiously supplied with water, but no œdema made its appearance until the dilatation of the renal vessels had ceased.

Dr. WIESEL (Vienna) said that, according to his observations in chronic Bright's disease, the chromophilic system inside and outside the suprarenal glands was abnormally developed, but only in cases where hypertrophy of the left ventricle of the heart was present. The increase of the chromophilic elements depended on the sympathetic nerves. He was of opinion that nephritic arteritis was due to a degeneration which began in the media of the arteries and led to hyperplasia only after atrophy of the elastic elements and of the muscles had taken place. Nephritic arteritis was anatomically very like arteritis caused by adrenalin.

In the course of the discussion Professor STRAUSS (Berlin) said that vascular lesions were essential for the production of œdema—an opinion which was proved by the clinical fact that after a nephritic apoplexy the paralysed leg remained œdematous for a longer time than the healthy one. A dietary containing a great amount of sodium chloride might cause œdema in patients with Bright's disease because the sodium chloride attracted water. The principal question was the nature of the symptoms from which it might be inferred that a patient suffering from nephritis would probably develop œdema. Professor Strauss was of opinion that this might occur in cases where only a small amount of sodium chloride was present and where the body increased in weight.

Professor VON NOORDEN was opposed to the systematic withholding of sodium chloride from patients, because salt-free food was unpalatable and the patients became weaker through having little or no appetite.

The Circulation of the Blood in the Coronary Vessels.

Dr. SPALTEHOLZ and Dr. HIRSCH (Leipsic) said that, according to the late Professor Cohnheim, the coronary arteries were end arteries, but by means of injections they had discovered anastomoses between these arteries both in the dog and in the human subject.

Dr. SCHWALBE (Berlin) said that several other arteries besides those of the heart were erroneously believed to be end arteries.

(To be continued.)

THE RENEWAL OF THE SANDGATE SANATORIUMS SCANDAL.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

ONCE more the Sandgate scandal has come before the public and this in a manner that will cause an unpleasant surprise. The pretence that outdoor treatment such as is given to patients at Nordrach, Davos, and Leysin, could be obtained at the Jones's homes of Sandgate was exposed long ago.[1] Mr. Jones, junior, declared that he had destroyed 10,000 circulars, making assertions to that effect. Committees of the House of Lords and then of the House of Commons inquired into the matter and finally the Sandgate Urban District Council (Sanitary Powers) Act of 1905 received the Royal Assent on August 4th of that year. This law was supposed to herald the dawn of a new era. To Sandgate appertained the honour of having become the pioneer town of Great Britain. It is but a small place with barely 2000 inhabitants, but it is so close to Folkestone as to become practically a suburb of that fashionable seaside resort. This very small community has spent £3000 to get a special Act of Parliament which, as an example, was to prove of great benefit to all towns in general and to Folkestone in particular. From the Jones's homes of Sandgate the undisciplined patients who, for the most part, are suffering from pulmonary tuberculosis, can easily stroll up to the Leas, mingle with the fashionable crowd that gathers on this favoured spot, and listen to the Folkestone band. Doubtless these pauper patients behave as well as can be expected in the circumstances; but there are some rough elements among them, and the inhabitants of Sandgate naturally complain when they find that about one-tenth of the residential population consists of sick paupers imported from other parts of the country and from notably such poor districts of London as are represented by the Poplar Union. Nor are the inhabitants, who treat their own paupers in a very different manner, inclined to believe that the ratepayers of London and other centres would approve of the manner in which their money is spent at Sandgate.

If patients are sent to the seaside at the public expense this is done so that they may be cured by undergoing regular treatment. It is true that in most cases listening to music on the Leas does the patients more good than loitering about the public-houses at Sandgate. The ratepayers of Folkestone, however, are not animated with such loving kindness as to tax themselves so as to provide bands for the benefit of the paupers from Poplar and other such places. Thus at Folkestone, as well as at Sandgate, there was a joyful anticipation that, after an Act of Parliament had been obtained, something more like order and discipline would prevail at the Jones's homes. It was supposed that the patients would be classified and those who were in such a condition as to be a danger to the community would only be accepted in places where there exist private grounds sufficiently large to assure their complete isolation from the general public. The Jones family does possess a property well suited for this purpose—namely, Manor House. It is well away from the town and surrounded by a park and gardens. In regard to its beauty as a private residence this had already been desecrated by the building of pigsties and the attempt to convert an admirable site into a pig farm and dairy. Strange to say, however, that the one and only property which the Jones family possesses which is really suited for the outdoor treatment of tuberculosis is the only place where they have never sent a patient of any description. Moreover, these homes never were under the real and unfettered management of a qualified medical practitioner. It was for this reason that, after a lengthy debate during the congress of the Royal Institute of Public Health when it met at Folkestone two years ago the following resolution was adopted:—

> That homes or sanatoriums for the aggregation and treatment of tuberculous patients should stand in their own grounds in an isolated position away from the general population and be placed under the absolute control of fully qualified medical practitioners.

Formerly it was not reasonable to expect that there should be effective medical control. Before the House of Lords Committee evidence was given and a document was read which did give Mr. A. J. Gore the post of "consulting and acting physician" to the said homes and made him "solely responsible" for the welfare, food, and treatment of the patients. The matrons and nurses who did not carry out his instructions were to be dismissed, and, in fact, on paper the whole arrangement seemed satisfactory. But it also appeared, in evidence, that this deed had been drawn up by Mr. F. T. B. Jones, who was dead, on behalf of his father, Mr. J. J. Jones who was also dead, and was supposed to be applied by Mr. P. H. Jones who had no legal authority whatsoever to deal with the question. Besides, and as pointed out at the time,[2] whatever documents might be drawn up, the medical officer employed could not be really master of the situation. The simple fact of being employed destroyed his freedom of action. The fact that the payments made would not be less than £200 a year and might amount to about £300 placed the medical officer in a dependent position. No medical practitioner would accept such a post if he had sufficient private means to be independent of the remuneration. But, on the other hand, the medical officer would soon discover that he could not keep his post if in his zeal for the welfare of the patients he compromised the profits which his employers derived from the business. Therefore it was felt that so long as such sanatoriums were allowed to be managed on the lines of a commercial enterprise the law should step in between the speculator on one side and the patient on the other and lay down certain principles that must be observed. These rules and regulations of management were not to be left to the medical officer, as he would probably lose his post if he attempted to render them effective. Therefore the Sandgate Sanitary Powers Bill established two very important principles: Firstly, that after March 1st, 1906, no one should keep within the district a building used to receive patients without being licensed; and, secondly, that the district council should draw up rules in regard to the structure and management of such places

[1] See THE LANCET of August 23nd, 1903, p. 565.

[2] See THE LANCET of July 1st, 1905, p. 51.

These rules or by-laws, if approved by the Local Government Board, could then be enforced and penalties inflicted in case of non-observance.

Such an enactment seemed very much to the purpose. It was only necessary for the Sandgate authorities to draw up suitable rules and regulations. As good advice from competent authorities would be readily tendered rules could be drawn up that would render Sandgate free from the grievances from which it had suffered for so long. Other towns seeing how the little community of Sandgate had substituted law and order for the anarchy which had prevailed during many years, would naturally apply for similar powers. Parliament finding such demands flowing in from various quarters would soon conclude that instead of dealing with many local Bills it would be best and would involve less trouble to enact one general law for the entire kingdom. Thus, by its initiative, Sandgate might have taken the first trial step destined to save this country from the slur of having no law to prevent a scandalous exploitation of a large number of patients. If a tradesman wishes to open a shop for the making up of medical prescriptions the drugs must only be handled by a qualified pharmacist. Here, in any case, we have law. But if another tradesman opens a sanatorium for the medical treatment of tuberculous patients, he can construct or purchase the most unsuitable building, he can feed his patients on inappropriate diet, he can overcrowd them, he can lodge them in such a manner as to make it impossible for them to obtain sufficient pure air, he can let them frequent public-houses or music-halls, and, generally speaking, besport themselves in such a manner as to become a danger and a nuisance to the community and greatly to compromise their own chances of recovery. It may pay better, at Sandgate it does pay better, to allow such things to happen than to enforce suitable rules for the care and control of patients. This state of things is pure anarchism—that is to say, there is no law, no government. But at Sandgate it was now thought that law and government would be introduced. The principle was accepted and a law was enacted to that effect. Rules and regulations were to be drawn up and sanatoriums would only be sanctioned if they observed such rules. All this seemed so just, so simple, and so likely to be effected that apparently it was considered too good to be true.

The Lords Committee, it will be remembered, at once set to work to destroy the good which it had done. Events have now proved that this mischievous purpose has been most successfully accomplished, for the law remains a dead letter. The Lords Committee added a clause to the Bill which is worded as follows:—

> If the owner or occupier of any house, building, or premises used as a hospital for disease on the 22nd day of May, 1905, sustains any damage or loss in respect of such house, building, or premises, or in respect of the business conducted in any such house, building, or premises by reason of any regulation made under this Act, or by reason of any condition imposed by the council on the grant or renewal of any licence under this Act, or by reason of the refusal by the council to grant or renew any such licence, the council shall pay to such owner or occupier respectively full compensation for all such damage or loss, and the provisions of the Lands Clauses Acts with respect to the claiming, settlement, and recovery of compensation shall apply with all necessary modifications to compensation under this section.

The term "a hospital for disease," as employed in this Act, is taken to cover homes where tuberculous patients are received and does not include convalescent homes. As it was pointed out at the time, this compensation clause is a premium offered to evil doers. At present anyone who before May 22nd, 1905, established in a crowded London thoroughfare, or in any other unsuitable position, a home for the treatment of tuberculosis may look forward, if the Sandgate precedent holds good, to receive "full" compensation.

It is said that when the Sandgate Bill came before the Committee of the House of Commons a strenuous effort might have been made and that the compensation clause might then have been removed, but there was a risk that this would wreck the entire Bill. At that time the Sandgate district council was anxious to get the Bill in any form, thinking that an imperfect measure would be better than nothing and that it was preferable to pay compensation rather than to allow the scandal of the Jones's homes to continue. It did not reckon, however, on the revulsion of feeling that the disappointment would cause. Here were people the value of whose property and whose incomes had been reduced 50, and even more than 50, per cent. If any compensation was to be given they claimed it for themselves, arguing that the persons who had been ruined should receive compensation and not those who had caused the ruin. Already the impoverished inhabitants heard that their taxes must be increased so as to pay the £3000 which it had cost to carry the Bill through both Houses of Parliament. Now, under this Bill which was to bring them relief they were to be further taxed for the purpose of paying compensation to the Jones family so that they might cease to create a nuisance. Coinciding with this discontent came an election for the renewal of a part of the district council. This election effected a local revolution. The resignation of the clerk of the Sandgate urban district council, who had engineered the Bill through Parliament and was prepared to apply this new law, was now accepted. A new district surveyor and sanitary inspector was appointed. Of the three most important local functionaries only the medical officer of health remained. With the new men came a new policy which has led up to the recent proceedings and judgment against the Jones's homes before the Elham county bench. This result, however, was not obtained under the new law but under the old Public Health Act of 1875. All the difficulties that for so long afflicted the inhabitants of Sandgate are of more than local interest. In the absence of any law on the subject similar difficulties may arise in any part of the country. Therefore it is of practical utility to understand in its principal features the problem as it now stands. For this purpose it will be necessary to analyse the details of the proceedings which have taken place and to examine carefully the situation created by the new Act of Parliament.

(To be continued.)

SOME TURKISH LAZARETS

AND OTHER SANITARY INSTITUTIONS IN THE NEAR EAST.

BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.

(With Reproductions of Photographs taken by the Author.)

VI.[1]

THE CAMARAN LAZARET (*continued*).

Existing Hospitals for Infectious and for Ordinary Diseases.—Inadequacy of Present Buildings (Arishes).—Statistics of Ordinary Sickness among the Pilgrims.—Proposed New Hospital for Ordinary Diseases.—History of Plague and Cholera at Camaran since 1890.—Proposed New Hospital for Infectious Diseases and Small Disinfecting Pavilion common to the Two Hospitals.—The Personnel of the Lazaret: Permanent Staff and Annual Mission; the Accommodation Provided for Them.—New Houses Proposed for the Medical Officers and for Several Minor Employees.

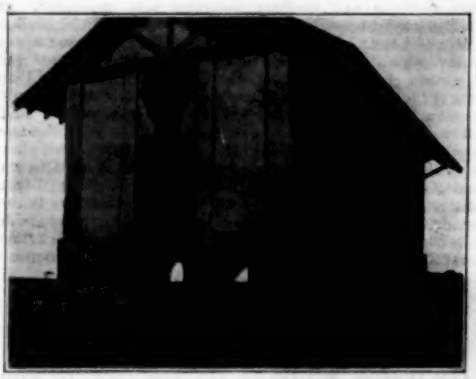
THE present hospital accommodation at Camaran is not of a very satisfactory character. As already stated, it was originally intended that the sick should be treated within the cordons, instead of being removed to a central hospital; and with this object a masonry building was constructed in (or near) each cordon. The characters of these buildings were briefly described in Article IV. They are built of bricks prepared at Camaran; the flooring is raised and supported on a series of arches and piles, also composed of brick. Unfortunately the bricks have proved to be not sufficiently strong to support the weight of the buildings. In each of them, with a quite remarkable uniformity, the walls have become badly cracked, and there is a serious outward thrust at the junction of the basement and the walls. In addition, the flooring, composed of tiles, has been badly distorted; the two rows of tiles corresponding to each row of brick piles underneath have been crushed together (like the angle of a roof); and the brick arches threaten to fall in. In one of the buildings (that at the fourth cordon) this has actually happened: one arch has entirely collapsed and a gap a yard or more wide runs right across the floor of the building. The exterior of one of the camp hospitals is seen in Fig. 22. The Commission, on the advice of its engineer, condemns these "hospitals" as too dangerous to be put to any use and recommends their demolition. Some of the

[1] Nos. I., II., III., IV., and V. were published in THE LANCET of April 27th (p. 1188), May 4th (p. 1251), 11th (p. 1317), and 18th (p. 1389), and June 1st (p. 1518), 1907, respectively.

material of which they are built (notably the woodwork and tiles of the roofing) can be employed for other constructions.

For some years past it has been recognised that it is more satisfactory to treat the sick in a central hospital than in the cordons themselves. Two temporary hospitals composed of "arishes" have been run up, one on the small island already mentioned near the third cordon and the other some way inland and near the oasis and Sheikh Iraki's tomb. The hospital on the small island consists of two mat

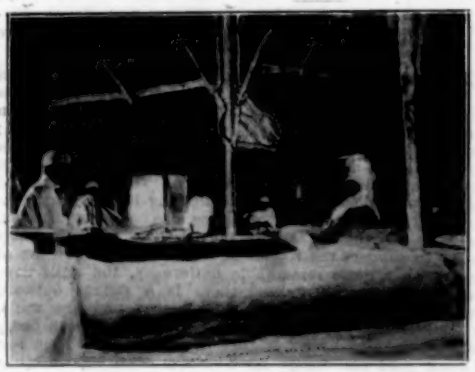
FIG. 22.



Hospital in one of the cordons.

sheds; it is occasionally used to isolate cases of small-pox. The sheds are old and in bad condition, and this "hospital," which, as the Commission states, scarcely merits the name, is condemned to disappear. The other hospital consists of three arishes, of practically the same construction as an old-type arish for pilgrims in the cordons but rather smaller. It is surrounded by a lath fence and connected with the rest of the lazaret by a branch of the Décauville railway. The arishes were originally put up to lodge the military guard of the lazaret and have only been used as hospital wards since 1902. The interior of one is seen in Fig. 23. Each arish can hold 12 patients. At the

FIG. 23.



Interior of a hospital arish.

end of one is a small compartment used as a laboratory; and there are other sheds used as a kitchen and offices. Outside the enclosure there are two pits in the sand into which the excreta are thrown and covered with lime. In place of this hospital, which does not fulfil the requirements of a modern institution of this nature, the Commission proposes to build a masonry hospital for ordinary diseases, the plan of which is annexed to its report. This plan provides for four wards, in separate pavilions, two of which would hold 12 patients each and the other two eight patients each. There would thus be accommodation for 40 patients. Experience has shown that this will suffice for the needs of the lazaret; indeed, up to the present the total number of sick under treatment at the same time has rarely exceeded 30. The following table shows the numbers of sick pilgrims removed to hospital in the last three pilgrimage seasons.

Year.	Number of sick.			Number of cases of small-pox.
	Men.	Women and children.	Total.	
1903-4	164	52	216	12
1904-5	120	24	144	29
1905-6	168	27	195	13

The plan of the proposed hospital further provides for an operation-room, a bacteriological laboratory, a kitchen, a pharmacy, and rooms for attendants and for linen, &c. Surgical cases are not very common among the pilgrims but they do occasionally occur and, in addition, cases requiring operation are not infrequently attracted to the Camaran hospital from among the Arab population of the island and of the mainland. Lithotomy or lithotrity and amputation for mycetoma (Madura foot) are the operations most frequently performed. I have published elsewhere[2] what are, I believe, the first recorded observations on the existence of the last-named disease in Arabia. As far as they go, they would seem to show that Madura foot is of quite common occurrence in the Yemen province of that country.

In addition to the hospital for ordinary diseases the Commission strongly urges the construction of another hospital for infectious diseases, especially plague and cholera. It is, indeed, one of the most serious deficiencies in the lazaret as it now is that there is no proper accommodation for the isolation and treatment of cases of these diseases. Fortunately, of recent years neither plague nor cholera has been very frequently seen at Camaran, but it is obvious that they may occur at any time and that means should be provided for promptly dealing with them if they should break out. The history of both these diseases in the Camaran lazaret during the last 16 years is of considerable interest and may be briefly summarised as follows. Accurate records for the years preceding 1890 are unfortunately wanting.

In 1890 the s.s. *Deccan* arrived at Camaran from Bombay, having had 34 deaths on board during the voyage, seven of which were ascribed to cholera. There were three cholera patients on board at the time of arrival; 12 other cases developed during the landing operations; and in all there were 36 deaths from the disease among the pilgrims from this ship. The rest were detained 59 days in the lazaret. In addition, a soldier on guard, three Arab "gardiens," the "*bakal*" (provision seller), and three inhabitants of the village died from cholera which was therefore the cause of 44 deaths in all. Two other infected ships arrived at Camaran the same year on their way back from the Hedjaz (already invaded by cholera); on one there were four cases and three deaths, while on the other there were 11 cases and six deaths.

In 1891 the s.s. *Sculptor* arrived at Camaran on May 1st. Nothing suspicious had occurred during the voyage. On the 8th cholera broke out among the pilgrims from this ship and up to the 21st there were 18 cases and 14 deaths from the disease. In addition, an Arab guard died from cholera. In the same year one fatal case of cholera occurred among the pilgrims returning to the Yemen from the Hedjaz.

In 1893 the s.s. *Adana* arrived at the lazaret, carrying soldiers from Hodeidah, the principal port of the Yemen. Cholera was then present in that province. The disease attacked the men in the lazaret and caused 37 deaths. The ship remained 39 days at Camaran. In the same year a suspected case of cholera occurred on the voyage and another at the lazaret among the passengers of a ship from Calcutta. In May of the same year the s.s. *Knight of St. John* arrived at Camaran; cholera broke out amongst the passengers three days after they had landed in the lazaret. There were in all 34 cases with 25 deaths. The ship remained 31 days in quarantine.

In March, 1895, the s.s. *Mohammadi* arrived at the lazaret with 818 pilgrims. On the seventh day after the landing of the latter cholera appeared and in 17 days was the cause

[2] Brit. Med. Jour., April 21st, 1906.

of 27 cases and 25 deaths among the pilgrims. In addition a native employed in emptying the cesspools and three soldiers died from the disease, bringing the total number of cases to 31 and of deaths to 29. In the same month of the same year the s.s. *Jubeda* arrived with 1044 pilgrims. Four days later cholera broke out amongst them and in the course of a month 57 pilgrims were attacked by the disease and 48 died; in addition six guards and two soldiers died from it. There were thus in all 65 cases and 56 deaths from cholera. In April, 1895, the s.s. *Hoseines* arrived at Camaran with 706 pilgrims. Six days later cholera broke out amongst them; the epidemic lasted a month and caused 20 cases with 15 deaths among the pilgrims and one death among the Arab guards.

Since the date last given no case of cholera has been observed in the Camaran lazaret. It is certainly a striking fact that, while in the first five years of the series, cholera was imported there on 11 occasions, in the last 11 years it has not once made its appearance. This difference is probably to be ascribed to the stricter measures taken in Indian ports before the departure of pilgrims since the appearance of plague in Bombay in 1896, and also in some degree to improvements effected in the lazaret itself—more particularly the introduction of steam disinfecting stoves and of a distilling apparatus to provide a pure drinking water. The only case of plague observed at Camaran during the period under review was an imported case which occurred on a sailing ship in 1900; the patient recovered.

The Commission's report expresses the hope that the lazaret may continue to be as free from cholera and plague in the future as it has been in the past 11 years. But, as is rightly pointed out, either disease may appear there at any moment and it is the first duty of those responsible to provide a proper hospital for the isolation and treatment of such cases as may occur. The Commission proposes therefore the construction of a small hospital of three wards, in separate pavilions, each ward sufficing for eight persons. The plan of such a hospital, with its annexes, is inserted in the report.

Each of the two hospitals proposed by the Commission will be surrounded by a high wire fencing of the same character as that proposed for the cordons. The hospital for infectious diseases will be built at some distance to the north of the hospital for ordinary diseases. Between the two it is proposed to build a small disinfecting pavilion for the common use of both, and to establish here the moveable disinfecting stove of which mention has already been made. The new hospital sections will be connected with the rest of the lazaret by a loop line of the Décauville railway.

In the preceding articles I have described at considerable length those portions of the lazaret of Camaran that are essentially intended to serve the needs of the pilgrims themselves. There remain, however, a large number of buildings and installations connected with the administration of a large institution such as the one in question. These may be somewhat more summarily dealt with.

The staff of the lazaret and their residences.—The staff is made up of two groups of employees—those who remain at Camaran all the year round (*personnel permanent*) and those who go there only for the five or six months of the pilgrim season (*personnel provisoire*). The latter form what is commonly spoken of as the annual "mission" to Camaran. The permanent staff consists of the director (a medical man), a first clerk, a first kiatib (Turkish clerk), a "magasinier," three disinfectors, first, second, and third engineers (*mécaniciens*), two assistant engineers (*aide-mécaniciens*), a stoker, two painters, two masons, a carpenter, two head guards, eight guards, a "chef-arichdji," and eight "arichdjis" (i.e., builders of arishes), two boatmen, and some other employees. The "mission" consists of from seven to ten medical men, a lady practitioner (from India), a chemist, a second clerk, two additional disinfectors, two additional boatmen, three male and one female hospital attendants, and others. In addition to the above there is the crew of the tug, consisting of a captain, an engineer, a stoker, and three sailors, and a large and variable number of Arabs and Dankalis, employed as "guards" in the cordons, to assist in the machinery building, in the disinfecting pavilions, or in the emptying of the excreta pits (*vidangeurs*), as postmen, messengers, servants, and in a variety of other capacities. The number of "guards" employed varies with the number of pilgrims interned in a given cordon. In principle there should be one guard for every ten pilgrims, but this maximum is rarely attained. Still there are often 30, 40, 50, or more guards in a single cordon; they are paid from four to five piastres (8*d.* to 10*d.*) a day. A considerable number of the persons mentioned in the above list live in the village of Camaran. The rest (including all the European members of the staff) are housed at the lazaret in a series of structures which may be briefly described as follows.

In each cordon is the "doctor's house" mentioned in Article III. It is proposed, as there stated, to give up these houses to pilgrims "of distinction" and to build a new smaller house for the medical man in each camp. The plan of such a house is annexed to the Commission's report; it provides for two rooms, with a good verandah back and front, and kitchen, bathroom, and water-closet (all lacking in the present houses) attached.

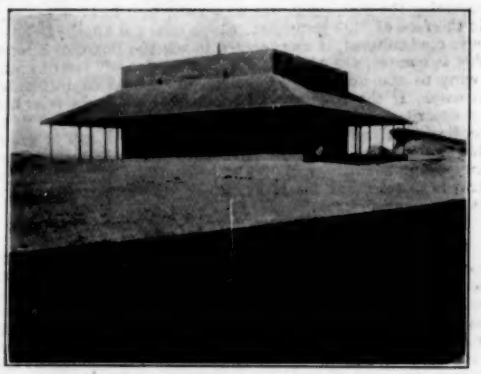
When not on duty in the cordon the medical members of the staff are mostly lodged in rooms in the upper storey of a building known as the *logement du personnel*. This is the largest and most central of the administrative buildings. It

FIG. 24.

New arish bungalow occupied by the Commission.

contains the offices of the lazaret and a large store-room on the ground floor and was intended originally to have no upper storey. But, as an after-thought, the upper storey was added with a verandah running round it. A number of "kutcha" constructions, used as kitchens, depôts, &c., in its immediate neighbourhood are condemned to disappear.

FIG. 25.



The lady practitioner's house.

As a whole, the building is of solid construction and in fair condition; it has certain defects which it is proposed to remedy but which scarcely need to be enumerated here. The rooms in the upper storey serve to house not only the medical officers of the lazaret but also some other members of the staff. The Commission proposes to build a separate

house for the medical officers, the plan of which is furnished in its report. It would provide for a large common room, six bedrooms, two deep and shady verahdahs, kitchen, bath-rooms, and water-closet.

Fig. 24 is a view of the arish-bungalow built for the members of the Commission and occupied by them during their stay in the island. It will henceforth serve as the residence of the director of the lazaret and his family. It is built of the same materials as the arishes for pilgrims, only of rather better quality, and the whole has been more carefully constructed. It consists of a central dining-room of hexagonal shape, with three bedrooms and three deep verandahs leading off it. In the climate of Camaran it made a pleasant, cool, and shady house to live in.

The lady practitioner, who comes to the lazaret from India each pilgrimage season, occupies a stone house specially built for her and only recently finished. It is seen in Fig. 25 and is one of the most satisfactory of all the residences provided for members of the staff. In another stone house, at no great distance, is lodged the British Vice-Consul, who comes over from Hodeidah to reside at Camaran during the pilgrim season. On the "Mervani plain," close by, are five small houses occupied by different employees of inferior rank. They were originally built as temporary lodgings for the workmen employed in the repair and completion of the lazaret ten years ago. The Commission found them unsuited for permanent residences in a climate such as that of Camaran, and it is proposed consequently to build five houses in their place, not on the same site but on a hill close to the northern shores of the bay, known as the Djebel Hadija. This hill rises some 40 or 50 feet above sea-level and is one of the most airy and pleasant spots in the island. Finally, there are several arishes, some on Djebel Hadija, some near the machinery building and elsewhere, occupied by the guards and other inferior members of the staff.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Schools as "Poison Dens."

IN the course of a discussion at a recent meeting of the Cheshire education committee some strong language was used as to the insanitary condition of many of the schools in the county. The matter arose from the Director of Education drawing the attention of the committee to the fact that the Government grants to elementary schools were liable to reduction on account of the absence of children from school either suffering from infectious sickness or coming from homes where it existed. One of the members said that some of the schools were "simply poison dens where children were crowded to the prejudice of their health. When they were poisoning the children it was no wonder they had epidemics." In the face of this statement, which does not appear to have been contradicted, it was decided to ask the Board of Education to compensate education authorities for any loss of grant owing to the absence of scholars on account of infectious disease. If the condition of some of the schools is as bad as described, and the educational authorities allow it to continue, they are asking for compensation for loss of grant due to the insanitary state of schools under their authority, for which conditions they are responsible. Their obvious duty is to get rid of the insanitary conditions and afterwards ask for compensation.

The Rearing of Infants.

Mr. A. W. Martin, the medical officer of Gorton, has been speaking some plain words in his report as to the prevalence of diarrhœa among the children during the latter part of last year. He states that of the number of cases only about half the mothers had made an attempt to suckle their infants. "The present generation is witnessing an occurrence in evolution never probably before experienced by the human race, and that is, a race of breastless women." He says it is difficult to estimate the extent of the connexion between this and the increased drinking habits of women, but he believes it has an important bearing on it. The evolution he speaks of is not an agreeable one, independent of its being of ill omen for the coming race.

Death from Anthrax.

Two butchers, living near Blyth and working for the Seaton Delaval Coöperative Society, developed symptoms of anthrax on May 23rd. One of them has died at the Newcastle-on-Tyne Infirmary, but the other is said to be going on favourably.

June 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Military Hospitals in Scotland.

THE War Office recently approached the St. Andrew's Ambulance Association to see whether it could, in case of war, take charge of the military hospitals in Scotland and so release the Army Medical Corps for service abroad. I understand that the association has expressed its willingness to undertake the duty. It has been arranged that the officers and men in time of war would receive payment on a similar scale to that in force in the Royal Army Medical Corps and would have to hold themselves ready for service at 48 hours' notice.

Industrial Diseases in Glasgow.

In connexion with the evidence taken by the Departmental Committee on Compensation for Industrial Diseases the information given by Dr. A. K. Chalmers, medical officer of health of Glasgow, was distinctly interesting. The death-rates from these diseases when in tabular form bring out very clearly the diminution in the number of deaths from the various so-called industrial diseases. From all causes for males and females at each decennium the rates are now lower than in the 1871 period, and, as a rule, the male rate is in excess of the female rate save between the ages of 25 and 35 years. As regards pulmonary tuberculosis in the "seventies," the female rate exceeds the male rate at each age period and is still above it at ages from 25 to 45 years in 1902; from 45 to 65 years it is below it. As regards other respiratory diseases, the female rate is uniformly lower than the male rate throughout. As some inequalities appeared in the tables when pulmonary tuberculosis and other diseases of respiration were shown separately it was thought well to group all diseases of the lung, including pulmonary tuberculosis, together. The result was to produce a more uniform movement in the rates and showed that between the ages of 25 and 35 years those for females were almost always, although only slightly, in excess; but in the succeeding decennial periods, and particularly after the age of 45 years, the reverse was the case and became pretty marked.

Arbroath Infirmary.

The honorary treasurer of the Arbroath Infirmary has received a cheque for £100 to go to the funds of the infirmary from the North British Railway Company in recognition of the services rendered by the infirmary at the time of the Elliot Junction disaster.

Motor Ambulance Vans and Speed Limit.

At Kilmarnock sheriff court last week the driver of a motor ambulance was charged with exceeding the ten-mile limit in passing through the village of Fenwick. The defence was that a motor ambulance was privileged in the same way as a fire brigade, and the driver stated that he had never been interfered with in Glasgow or elsewhere when exceeding the limit. In this case the ambulance was empty but the driver was hurrying back to take a patient to the infirmary. The sheriff, in imposing a modified penalty of £1, said he should be inclined to regard with great consideration any ambulance van or fire engine which was proceeding for the preservation of life or property, but it would be a very curious way of promoting the public safety if ambulances were to go at such a rate as to cause people to be killed or accidentally run down.

Asylum Tragedy.

A most unfortunate incident is reported from Sunnyside Asylum, Montrose. In a dormitory where several men were sleeping was one old man, 68 years of age, who was partly paralysed. During the night he was attacked by the patient in the next bed to him and died from a wound inflicted on the head with a wooden chair. No blame is attached to the hospital authorities as the assailant had previously shown no homicidal tendencies.

Heavy Infantile Mortality at Stirling.

The Stirling town council has decided to appoint a lady as

health visitor and nurse in view of the alarming infantile mortality prevailing in the poorer districts of the town. The mortality last year among infants was 212 per 1000—a number exceeding the infantile death-rate in even one of the lowest and poorest localities in Glasgow.

University of Aberdeen: Cancer Research Fellowship.

At a meeting of the Senatus of the University of Aberdeen held last week, the Medical Faculty reported that an appointment had now been made to the Fellowship for Cancer Research recently instituted in the University by the Hon. A. McRoberts, the gentleman appointed being Mr. Bertie R. G. Russell, M.B., Ch.B. Aberd., who is at present practising at Ilford, Essex. The value of the Fellowship is £200 per annum. Dr. Russell was winner of the Anderson research scholarship in connexion with the University of Aberdeen.

Great North of Scotland Railway Ambulance Competition.

The eighth annual competition for the silver challenge cup presented by the directors of the Great North of Scotland Railway Company for the team most proficient in ambulance work was held on Saturday of last week at Inverurie under the auspices of the St. Andrew's Ambulance Association. The competition is open to teams of five men each drawn from the servants of the company and the Joint Station Committee who have gained ambulance certificates or hold medallions of proficiency in the work. Four teams entered—Aberdeen Guards, Elgin Station, Locomotive No. 2, and Locomotive No. 1. The result was as follows:—

	General knowledge.	Bandaging, &c.	Transport.	Total
1. Locomotive No. 2	77½ ...	83 ...	82½ ...	243
2. Aberdeen Guards	76½ ...	75 ...	84 ...	235½
3. Locomotive No. 1	71½ ...	74 ...	87½ ...	233
4. Elgin Station	75 ...	75 ...	78 ...	228

It may be mentioned that since the inauguration of the competition in 1900 the locomotive department has gained the cup five times—namely, in 1900, 1901, 1904, 1906, and 1907, while the Aberdeen guards were successful in 1902, 1903, and 1905.

June 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Public Health of Belfast.

AT the last weekly meeting of the Belfast health committee, held on May 30th, it was reported that there were 22 cases of cerebro-spinal meningitis notified for the week ended May 25th, as compared with 24 in the previous week, the total cases up to the date named being 465 and the total deaths 336. The cases recently admitted are of a milder type. The Registrar-General, Mr. Robert E. Matheson, has issued a special return relative to the epidemic for the quarter ended March 30th which gives some interesting statistics with regard to age and sex incidence. During the week ended May 25th the death-rate of Belfast was 23·1 per 1000, and during the four weeks ended at that date there were 221 notifications of infectious disease.—At the usual monthly meeting of the Belfast city corporation, held on June 3rd, it was reported that between April 14th and May 18th the general death-rate of Belfast was 23·7. The report of the medical officer of health was largely statistical, but a comparison of Belfast with smaller Irish towns like Cork, Limerick, and Londonderry is unfortunate. The bolder lessons to be drawn by comparison with towns of equal size in England and Scotland should be given to the population. The complete scheme for the new asylum put forward by the chairman of the asylum committee has been dropped on the ground of expense, and preliminary plans are to be prepared for extensions at Purdysburn to consist of administrative buildings, places of worship, and four additional villas.

Queen's College, Belfast.

It will be recollected that about a year ago Sir Donald Currie, who gave the munificent sum of £20,000 to the equipment fund of Queen's College, Belfast, in reply to a request from the students, promised also that, if by June, 1907, a sum of £3750 was raised he would contribute £1250, so that £5000 might be available for an athletic ground adequately equipped. The students thought that the best plan was to organise a great fête, and this was opened on May 30th by Mrs. Wisely, a daughter of Sir Donald Currie, and it has been in full swing every weekday until the evening of June 3rd. Unfortunately, the weather was most inclement and interfered with the outside "shows," but it is hoped that the desired sum will be raised to fulfil Sir Donald Currie's offer. The students and their friends worked very hard to make the fancy fair a success.

The Weather.

During the past week the weather in the North of Ireland has been very severe, cold, wet, and stormy, so that up to the present there is no appearance of summer.

June 4th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Infantile Mortality in Newport.

THE question of infantile mortality has for some years occupied the attention of the sanitary committee of the Newport (Mon.) corporation. During the five years 1896–1900 the infantile mortality rate in the borough was 170 per 1000 births and in the five years 1901–05 it was 142 per 1000. These figures show that the efforts made by the sanitary authority to reduce the mortality have not been without effect. It is of interest to note that water carriage is almost universal in Newport, so that there has been no abolition of privy middens, to the existence of which in the midland and northern towns the large amount of infantile mortality is so often attributed. In a recent exhaustive and instructive report the medical officer of health (Dr. J. Howard-Jones) points out that the chief measures by means of which the amount of child mortality may be reduced include (1) the education of the expectant mother in respect to the great importance of attending to her personal health and of making every effort to bring up her child at the breast; (2) education of the girls in the higher standards in domestic hygiene and temperance and the formation of continuation classes in these subjects; (3) the notification of all births within 48 hours to the medical officer of health; (4) measures for the better protection of infants, such as the strict supervision of illegitimate and farmed-out children; (5) measures operating through the mother, such as the feeding of expectant and suckling mothers; (6) measures for providing a pure milk-supply for hand-fed infants; and (7) measures for promoting cleanliness outside the homes. Dr. Howard-Jones considers that in the past too much attention has been paid to the provision of pure milk depôts instead of obviating the necessity for them by inducing mothers to nurse their offspring. He suggests that the midwives in practice in the town should be asked to coöperate in the work of persuading their patients to adopt breast-feeding and that there should be an organised system of visitation of the mothers for the purpose of educating them in regard to infant and domestic hygiene.

Cardiff Police Surgeons.

The Cardiff corporation has decided not to appoint a chief surgeon to the city police. A recommendation to make such an appointment was made last year by the head constable who proposed that the duties of the surgeon should be to examine all recruits for admission to the police force and to the fire brigade, to examine and to report upon cases of constables recommended for temporary pensions in consequence of incapacity, to deliver ambulance lectures and to consult with the divisional surgeons in cases of suspicious death where a second opinion was required. Until 1901 there was only one police surgeon in Cardiff but early in that year three surgeons were appointed, each with a separate division.

Notification of Pulmonary Tuberculosis in Shrewsbury.

The Shrewsbury town council has resolved on the recommendation of the medical officer of health (Mr. M. Gepp) to adopt a system of voluntary notification by the medical practitioners in the town of cases of pulmonary tuberculosis and to offer to disinfect, free of cost to the occupier, every house which has been vacated by a consumptive patient.

June 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Early Reaction of the Skin in Radiography.

AT the Academy of Medicine on May 22nd M. Béclère pointed out that in working with the x rays or salts of radium the inflammatory reaction generally takes ten days to appear; sometimes, however, on the second day an early and irritating erythema comes out which may be called the "pre-reaction." This is due to the less penetrating "secondary" radiations given out from the glass wall of the Crookes tube or the metallic envelope of the radium salts. From the therapeutical standpoint the chief lesson to be learnt from this physical theory is this, that the radiographer who wants to know if he has reached or exceeded the proper time of exposure and if he should continue the treatment should not, as is generally held, be guided by the presence or absence of this early reaction which is a purely accidental phenomenon, but should study as accurately as he can the necessary time of exposure to the therapeutic agent that he uses, whether the Roentgen or radium emanations; this is the best method of estimating the degree of the regular reaction which will follow and which is alone of importance.

Treatment of Ozæna by Injections of Solid Paraffin.

At the Congress of the French Otological, Laryngological, and Rhinological Society on May 14th M. Gault showed a paraffin syringe which was very simple and ingenious. Instead of increasing the force, which is the principle adopted in Broeckaert's apparatus, Gault's instrument decreases the resistance. It consists of a long body and short needle, and with it cylinders of solid paraffin at 45° C. can be injected; it is simple, light, easy to sterilise and to manipulate, and should prove very serviceable in the marked atrophic cases where injection has proved difficult.

Lumbar Puncture in the Treatment of Syphilis.

M. Jeanselme and M. Barbé have shown by performing lumbar puncture on 53 cases of syphilis that lymphocytosis may appear at any stage of the disease; it occurs frequently in the secondary eruptive stage but is not regularly found. It may equally well be seen in old cases with no nervous lesion that can be detected clinically. When a lumbar puncture can be done after a course of mercurial inoculations the continuance or disappearance of the lymphocytosis gives a useful indication as to whether the treatment should be continued or not; in fact, it replaces a guesswork system by a rational method of treatment.

Predisposing Effect of Cold in Experimental Tetanus.

On May 18th at the Biological Society M. Ciuca gave an account of some recent experiments with regard to tetanus. He first reminded his audience that the subcutaneous injection of tetanus spores which have been heated to 80° C. is innocuous, and that M. Vincent has shown that exposing the inoculated animals to excessive heat suppresses their resistance and determines the appearance of general tetanus. M. Ciuca has arrived at analogous results by submitting mice to cold. Immediately after being exposed to a temperature of 2° C. for one hour they were each injected with ¼ cubic centimetre of tetanus culture eight days old that had been heated to 80° C. for an hour. After four days tetanus developed and immediately became general and the animals died in 16 or 20 hours. Controls inoculated with the same dose without being exposed to cold showed no sign of tetanus. The same general tetanus occurs when the inoculation with heated spores is done not before but just after the exposure to cold. To sum up, chilling mice as well as overheating them abolishes their resistance to the inoculation of heated tetanus spores.

The Prophylaxis of Scarlet Fever.

At a recent meeting of the French Society of Military Medicine M. le Rouvillois said that he had ascertained that most of the epidemics of scarlet fever in military centres were due to infection brought by soldiers returning from their New Year's leave. These epidemics occur most frequently during the month of January and it would therefore appear that if the New Year's leave were stopped it would be a valuable prophylactic measure.

Poisonous Gases in Wells.

Only recently five workmen lost their lives by gas poisoning in descending a deep well. At the meeting of the Academy of Medicine held on May 21st M. Gréhant reminded his hearers that some time ago he had recommended a very simple method of preventing these lamentable accidents. It is only necessary before the men go down to lower a cage containing some small animal, such as a guinea-pig or a rabbit. If the animals die it shows that the air of the well is irrespirable by human beings.

Obituary.

Dr. Féré, whose death was recently announced, was a neurologist whose attention was at the beginning of his career directed towards surgery. The influence of Charcot, however, and the light which he threw upon the pathology of nervous diseases, attracted Féré into a different path. Early in his professional life he was appointed physician at Bicêtre where he remained to the end of his days. He was a man of wide research and of flexible intellect while he wrote much. His chief published works were "The Pathology of the Emotions," "The Neurotic Family," "Degeneration and Criminality," "Animal Magnetism," "The Evolution and Dissolution of the Sexual Instinct," "The Various Forms of Aphasia," and "The Home Treatment of the Insane" (*dans les familles*). His researches into the subjects of teratology and experimental teratogeny were a marked portion of his life's work and will be the means of keeping his memory green in the scientific world.

June 3rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Use of Tuberculin as a Test for Tuberculosis in Children.

AT a recent meeting of the Berlin Medical Society Dr. von Pirquet of Vienna read a paper on the Diagnosis of Tuberculosis in Children by Cutaneous Inoculation of Tuberculin. He said that after vaccination the reaction leading to immunity became visible as a rule on the second day and was fully developed within a week. Similarly, after the cutaneous inoculation of tuberculin a small papule was formed on the skin and disappeared within a week. In children under two years of age this reaction showed itself only in the case of those who were tuberculous, but at more advanced ages all children, whether tuberculous or not, showed the reaction, so that after two years of age the presence of tuberculosis could not be concluded from its occurrence. After inoculation 88 per cent. of the tuberculous children under two years of age showed the reaction, while 12 per cent. did not show it, the latter being either in a cachectic condition or suffering from miliary tuberculosis. Post-mortem examinations, which had been made in 23 cases, proved that the reaction occurred in the overwhelming majority of tuberculous children and that it was absent in non-tuberculous children. The reaction in question was a purely local manifestation, unattended by general constitutional symptoms, so that immunity was not produced.

Nephrectomy for Tuberculosis of the Kidney.

Professor Israel at a recent meeting of the Berlin Surgical Society gave an account of the after-history of the patients on whom he had performed nephrectomy for tuberculosis of the kidney. For this disease he had performed 102 operations, of which four were nephrotomies and one was a resection, the remaining 97 being cases of nephrectomy, which was of course the standard operation in the circumstances. Of the above 97 cases 11 died from the operation, ten died afterwards, and from three no replies to inquiries were obtained, leaving 73 patients whose subsequent history could be followed. In 45 of these 73 the operation was performed between two and 15 years ago, so that a definite opinion as to the results could now be formed. The patients were examined as to their weight, their general state, the function of the bladder, the possible existence of tuberculosis of the bladder, the quality of the urine, the state of the other kidney, and the cause of death in the case of the deceased. The result was that the patients had increased in weight by amounts varying from five to 45 kilogrammes, the average gain being 18·7 kilogrammes. Their general state was described in 86 per cent. of the cases as being very good, in 5·7 per cent. as tolerably good, and in 7·6 per cent. as weakly. It was proved by the investigation that nephrectomy when tuberculosis of the bladder was also present had a salutary effect on the latter condition, and from this fact it might

be inferred that the disease began in the kidney and descended to the bladder. The symptoms connected with the bladder consisted in pain and in frequent micturition. The pain was relieved by the operation, so that 80 per cent. of the patients had no pain after it. The frequency of micturition, which in 85 per cent. of the cases was abnormally high, became so much less that after the operation it was normal in 60 per cent., while in 11 per cent. more a considerable improvement followed, so that 71 per cent. of the patients were distinctly benefited by the operation. In two cases of bilateral tuberculosis of the kidney no improvement was obtained. The causes of the cystic troubles in tuberculosis of the kidney were not the same in the normal and in the tuberculous bladder respectively. In a normal bladder these troubles arose from the kidney by irritation caused by the secretion of the affected kidney and they disappeared immediately after the removal of that kidney. In a tuberculous bladder, however, the improvement depended on a diminution of the tuberculous process therein, as might be proved by cystoscopy and by the disappearance of tubercle bacilli from the urine. The improvement of the cystic troubles took place much later than in a healthy bladder and corresponded with the extent of the tuberculous process within the bladder. If only a small portion of the bladder was attacked the patient's control over it became good in 75 per cent., but in diffuse tuberculosis of the bladder control became good in 31·5 per cent. only. Even when the urine had become normal troubles of micturition might continue either from a shrinking of the organ after the tuberculous portion had healed up or from psychical causes. The other kidney when healthy at the time of the operation did not become tuberculous afterwards. In cases where tuberculosis developed afterwards in the other kidney latent germs of the disease had been present already. The other kidney was no less resistant than before, as was proved by the fact that two cases of Bright's disease happening in the remaining kidney ran an exceptionally easy course. Among the patients treated by Professor Israel there were eight who became pregnant and had 15 normal deliveries and two abortions, without any complication attributable to the kidney. Of the ten deaths which were not caused by the operation itself one was due to cancer of the rectum, five to tuberculosis of different organs, three to non-tuberculous affections of the uro-genital system, and one to some unknown cause. The deaths from tuberculosis included three from acute miliary tuberculosis, one from tuberculous meningitis, and one from tuberculosis of the remaining kidney. The non-tuberculous affections included one case of amyloid degeneration of the abdominal organs, one of chronic septicæmia, and one of ascending pyelonephritis. Death occurred in five cases after three months, in one after eight months, in one after 13 months, and in one after eight years. In 62 per cent. of the deaths the patients succumbed to secondary affections which were present at the time of the operation. These patients would possibly have been saved by a more early operation. From the fact that the results were the better the sooner the operation was performed, Professor Israel inferred that spontaneous recovery was almost impossible and that until an internal remedy against tuberculosis of the kidney was discovered nephrectomy should be performed as soon as a tuberculous affection of one kidney was ascertained.

June 3rd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

A Nobly Earned Jubilee.

ON May 26th, in Milan, in the great hall of the "Federazione delle Società Scientifiche," before a numerous assembly of medical men, nature-students, and members of liberal callings, including many distinguished citizens and ladies, was celebrated the fiftieth anniversary of the medical graduation of the Senator Dr. Malachia De Cristoforis. Letters of sympathy were read from men of light and leading all over Italy, after which Dr. Carlo Forlanini, professor of clinical medicine in the University of Pavia, opened the business of the day with an address in the name of the "Associazione Sanitaria" to the Senator De Cristoforis as a man illustrious in science and exemplary in citizenship. This was followed by a speech from the assessor Signor Menozzi conveying the thanks of the city of Milan to the "hygienist and sociologist" conspicuous for his philanthropy and his patriotism. After him came the "oraison de circonstance" of Dr. Luigi Veratti who evoked rounds of applause by an eloquent review of the duty-doing, self-denying life of the hero of the day—a life devoted to the welfare of the community from the humblest to the highest, a life which had been "coincident and co-efficient" with the elimination of the ailments of the artisan and of the "accidents" besetting labour, as well as with notable success in the crusade against tuberculosis and alcoholism. A magnificent album, artistically illuminated and framed, containing the autographs of a long list of admirers among the citizens and professional men of Milan was thereafter presented to the Senator Dr. Malachia De Cristoforis, who made a brief, a touching, and a singularly effective acknowledgment of the honour conferred upon him. "With the people I have shared grief and joy. At the people's side I will be so long as I live." These were his closing words, after which he asked permission to read the following: "Honourable Senator, risen again to new and long life, thanks to your great skill and kindness, I associate myself, from the depth of my heart, with the tokens of affection and esteem of your admirers, and I beg you to receive the expression of my undying gratitude. Your very humble servant, Teresa Parravicini (widow and laundress), your patient at the Ospedale Maggiore in 1872, who still enjoys excellent health." And with this dramatic episode the proceedings came to an end.

A Town of 1700 Inhabitants without a Medical Man!

Sardinia divides with Sicily the claim to be the "Cinderella of Italy," and yet either of them might be made the Island of Prospero. But misgovernment and maladministration haunt them like a twin Caliban, so that from being the *cella penaria* (the granary) of ancient Rome they can hardly keep their own inhabitants from starvation. Just listen to what I learn from Sassari, the northern capital of Sardinia and seat of a university. The population of Santa Maria d'Arzaghena, in consequence of the death of several "puerpere" for want of medical aid, has risen in something like rebellion against the authorities which had promised it the "medico condotto" (divisional practitioner) to which it was entitled. Months have passed and yet the township in question, with its 1700 inhabitants maintaining a life-and-death struggle against poverty and malaria, is still without a medical man. On May 31st, braving every obstacle presented by roads that are little better than bridle-paths, the chief men of the township, after 19 hours' march, waited on the prefect of Sassari, and in words of simple, touching eloquence appealed to him to do something in face of the mortality which has now reached an appalling percentage, and which, unless brought under by effective measures, will rouse the population to deeds of violence. What the prefect's response has been I have yet to learn, but such cases as that of Santa Maria d'Arzaghena are common enough to make Italians inquire, somewhat sadly, whether the "new order" is really an improvement on the "old" or whether Italy can, with peace to her own conscience, pose as a "Great Power" with so much domestic misery unrelieved.

Tuberculosis in the Etiology of Nervous and Mental Ailments.

The Genoese school is honourably identified with medical psychology and prominent among the cultivators of that field is Dr. Morselli, professor of clinical psychiatry in the University. A worthy inheritor of the name, himself an assistant in the medico-psychological clinique, Dr. A. Morselli, has issued a careful and eminently instructive volume under the title "La Tubercolosi nella Etiologia e nella Patogenesi delle Malattie Nervose e Mentali." As throwing fresh and clear light on a theme still obscure but fraught with interest to pathologist and practitioner alike, Dr. Morselli's treatise (Torino: Unione Tipografico-Editrice, 1 vol., 1907) is to be recommended as worthy of translation into English and thereby of a yet larger public than that to which it primarily appeals.

Professor Maragliano's Jubilee.

As I write, a correspondent informs me of another incident connected with the Genoese school—the celebration of the "professorial jubilee" of Dr. Edoardo Maragliano who holds the chair of clinical medicine. Dr. Maragliano has long been an indefatigable worker in the field of tuberculosis, and, associated with his name, a yearly prize will be instituted for the best contribution to the etiology, pathology, and treatment of tuberculous disease. King Victor

Emanuel III. contributes 1000 francs (£40) to the fund required for it. The jubilee, I may add, will be celebrated on June 22nd.

June 1st.

COPENHAGEN.

(FROM OUR SPECIAL CORRESPONDENT.)

The Bacteriology of Antarctic Soil.

Dr. E. Ekelöf has published his investigations into the number of bacteria present in the soil of the Antarctic region made during the stay at Snow Hill of the Swedish Antarctic Expedition in 1901–04. He found a relatively abundant bacterial flora but only in the uppermost five or ten centimetres of the soil. During the cold "winter months," February to November, the number of bacteria in this stratum was on an average 7000 per cubic centimetre. But during the two less cold "summer months," December and January, the number rapidly increased and reached its maximum in January, when it became ten times as high as it was during the coldest months. A peculiarity of the Antarctic bacteria was their very slow growth on culture media, often more than a week being needed to make them appear as macroscopically visible colonies. Another interesting fact about them was that none of them were able to liquefy gelatin and that none of the common bacteria of putrefaction were found. As a result of this it proved possible to keep the flesh of fowl and seal hanging in the open air the whole year round, even during the summer months with their strong sunshine, without the least sign of deterioration of the meat appearing. Dr. Ekelöf is not prepared to state whether pathogenic bacteria are present in the soil of the Antarctic region, but he found none and he thinks that the following circumstance is opposed to the likelihood of their presence. During the two years' sojourn of the expedition at Snow Hill not one of the members suffered from any of the common diseases arising from cold (catarrh, angina, bronchitis, laryngitis, pneumonia, pleurisy, and articular rheumatism). But as soon as they came into the mild climate of South America on their way back these diseases began to occur amongst them.

A Medico-legal Problem in Syphilology.

About one year ago the Danish legislative body carried a law regulating prostitution in Denmark. Before that time a control was established with obligatory medical examination of the *puellæ publicæ*. The new law provides that prostitution is not punishable as such, but the police are authorised to punish as vagabonds females who cannot convince the authorities of their being able to earn their livelihood in a decent manner. The law provides further that all persons, rich or poor, suffering from venereal diseases have a *right* to be cured *gratis* by certain practitioners who in Copenhagen were to be appointed *ad hoc* and paid by the municipality. This regulation, excellent as it is in itself, has had some disagreeable consequences to the profession. At the date at which the law came into force the best-trained specialists abstained from applying for the appointments because they would not run the risk of holding them in company with other not specially trained colleagues, for fear that the public should regard this as a sort of official recognition of the said colleagues as specialists. Only general practitioners were therefore appointed, but during the last six months the public has profited by its right to free treatment to such an extent that the actual specialists have hardly seen any venereal patients. The attention of the Copenhagen Medical Association has been drawn to this abnormal situation, and it is hoped that the association will succeed in inducing the authorities to arrange the important affair in a more reasonable way. It is of the greatest importance that this first instance of a sort of monopolising by the State of certain branches of practice should not be carried out in such a manner as to imply a pecuniary loss to the profession. Should such a thing happen it might prove a very serious precedent, as rumours are afloat that the Government is planning the substitution of a restricted number of physicians appointed and paid by the State in the place of the many hitherto privately practising sick-club doctors. As the sick-clubs, friendly societies, &c., comprise the majority of the population of Denmark, and as the State would, of course, pay as little as possible, it is well that the profession should be fully aware of the possible danger.

May 27th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Coroner's Jury Censures Physicians.

THE recent death of a woman who was under the care of two "Christian Science" healers in this city, but who was not seen by a legally qualified physician capable of giving a certificate of death, led to a coroner's inquest. The result of the inquiry was the exposure of the practice of some medical men of giving certificates of death in cases where the deceased had been attended exclusively by so-called "Christian Science" healers. The jury, many of whom were physicians, returned among other items of their verdict the following: "We find that a number of medical doctors in New York City make it a practice to furnish death certificates for persons who die under so-called Christian Science treatment, thus enabling Christian Science practitioners to evade the laws of the State of New York in their so-called treatment, and we respectfully call the attention of the Department of Health of New York City and the District Attorney of New York County, and the Medical Society of New York County to the practice of such physicians and request them to take all necessary steps required by law to put a stop to such practice and punish the perpetrators thereof."

International Congress on Tuberculosis.

The National Association for the Study of and Prevention of Tuberculosis has fixed upon the last ten days of September and the first ten days of October, 1908, for the meeting of the Congress on Tuberculosis to be held at Washington. This time is most fitting to foreign delegates. The attendance promises to be very large and every effort will be made to secure success for the work of the Congress. A tuberculosis exhibition will be created which will surpass any similar exhibition in this country. The various departments of the Government have become interested and will coöperate with the association. The latter will provide a fund of $100,000 with which to finance the Congress. Meantime, the American Anti-Tuberculosis League will hold its annual meeting at Atlantic City from June 1st to 4th, 1907, at the same time as the meeting of the American Medical Association. The two subjects for special discussion will be "Tuberculosis in the Negro Race" and "Tuberculosis and Milk."

Health in the Canal Zone.

The improved health in the Canal zone under the strict administration of sanitary regulations, prepared and enforced by a military *régime*, is attracting wide attention. No person could have been more thoroughly qualified for the position of chief sanitary officer, both by education and experience, than Colonel Gorgas of the United States Army. He had been very prominent in establishing and enforcing sanitary regulations in Cuba by which yellow fever had been exterminated in that island where it seemed to be indigenous. The results of his work in the Panama district have been well-nigh marvellous, as the following recent reports show. Since August last the number of sick among the employees has steadily decreased until now it is 19·40 per 1000, as against 33·72 in August. Among the 4600 white employees there were only two deaths from disease during the month of March, equivalent to an annual rate of 5·17 per 1000. Among the 1200 American women and children living in Canal Commission quarters there was not a single death and little sickness existed.

Places maintained by Abortionists are Public Nuisances.

An abortionist recently attempted to escape conviction of the charge of maintaining a public nuisance on the ground that there was no adjudicated case in which it has been held that the maintaining of a house for the purpose of practising the vocation of an abortionist constitutes a nuisance. The Appellate Court of New York, however, held that at common law it would have been, and under the provisions it is, a nuisance for a person by public advertisement to invite and receive a class of the public to his premises for the purpose of violating the laws of the State, as was done in this case; this constitutes "crime against the order and economy of the State by offending public decency."

Commitment of Suspected Insane.

One of the first-fruits of the notorious trial of Thaw is the introduction into the Legislature of a Bill which makes provision for the commitment of a person charged with

felony to a State hospital for the insane for the purpose of inquiry as to his sanity. The commitment may be made on the request of either his attorneys or the prosecuting attorneys, and for a term of not less than three nor more than six weeks. It is alleged, in opposition to the measure, that the time is too limited and that an asylum for the insane should not be selected. In regard to time, it is stated that in many cases an insane person might conceal for that length of time his peculiar delusion, illusion, or hallucination, or, on the other hand, a person might successfully feign a form of insanity for this period. The asylum for the insane is objectionable, for if certified as not insane the odium of the commitment to such an institution would ever after cling to him. The Bill is generally heartily approved as an improvement on the present court procedure as illustrated in the Thaw case.

Inspection of Medical Schools.

The council of the American Medical Association has recently instituted an inspection of the medical schools of the United States for the purpose of determining the exact character of their work and to classify them on a civil service basis. The council reports that there are 160 medical schools in the country, which is nearly the number in Great Britain, Germany, France, and Austria combined. They were found to represent every grade, from the very highest, as high probably as those of any country in the world, to the very lowest, a number being little better than diploma mills. The council states that some schools are absolutely worthless, being without equipment for laboratory teaching, without dispensary or hospital facilities. Some were no better equipped for teaching medicine than a Turkish-bath establishment or a barber's shop affords. Many of them are little more than quiz classes, in which men are drilled to enable them to pass examining boards of the States. The council concludes that it is in the power of the State examining boards and the organised profession to place American medicine on an acceptable basis by requiring a higher grade of educational qualification of those entering the schools. These State boards should agree upon a standard of what shall constitute a medical college in good standing and enforce that standard in their examinations of applicants.

Medicinal Foods.

The Council on Pharmacy and Chemistry of the American Medical Association has been investigating the nutritive value of so-called "medicinal foods." The results of this inquiry are as important to the profession as are the investigations, by the same body, of the composition and medicinal value of the various proprietary drugs supplied by manufacturing firms. It is demonstrated that large numbers of the most popular of these foods for the sick have little or no food value. Alcohol is in many instances the most potent factor in liquid preparations. In others the ingredients advertised are either wanting or are worthless as food.

American Association for the Promotion of the Hygiene of Schools.

At a recent conference held in Washington it was decided to organise a National Association for the Promotion of the Hygiene of Schools. The object of the association is to secure the coöperation of all workers in charity and teachers in the public schools in the improvement of the hygienic condition of the schools of the several States. It is believed to be impossible for the schools to take full advantage of their opportunities for the children's welfare without the knowledge of the work of the dispensaries, relief and fresh air agencies, and other forms of promoting the health of this class by workers in charity. It is also deemed of great importance that the latter, in order to do their work intelligently and satisfactorily, should be brought into close connexion with schools and the health authorities. The association will be represented in the Conference on School Hygiene which will assemble in London in August.

May 25th.

DONATIONS AND BEQUESTS.—The treasurer of the Brompton Hospital for Consumption has received £100 from "A. B.," Putney, and a donation of £500 from the trustees of Smith's (Kensington Estate) Charity; the Royal London Ophthalmic Hospital and Charing Cross Hospital have received donations of £500 each from the trustees of Smith's Charity; and the treasurer of the London Fever Hospital has also received a donation of £300 from the trustees of Smith's Charity.

Obituary.

ALFRED SQUARE COOKE, M.R.C.S. ENG., L.S.A.

Mr. Alfred Square Cooke died at his residence, Badbrook House, Stroud, on June 1st, in his sixty-fifth year. He received his medical education at St. Bartholomew's Hospital, becoming qualified as L.S.A. and M.R.C.S. Eng. in 1863 and 1864 respectively. In 1865 he was appointed house surgeon to the old Stroud Hospital. For two years he resided at the hospital, but subsequently he removed from the institution and commenced private practice, though he continued to act as house surgeon for another nine years. It was mainly through the efforts of Mr. Cooke that the present well-equipped and commodious hospital was opened in 1875. The same year he was elected honorary surgeon to the institution, which post he resigned in January, 1906, when he was appointed honorary consulting surgeon. In September, 1906, he was presented with a silver salver and a cheque for 120 guineas from the residents of Stroud and the district, in grateful recognition of 40 years' devoted service to the hospital. Mr. Cooke was a former president of the Gloucestershire branch of the British Medical Association. He at one time had a very extensive practice. He was for 37 years medical officer to the Stroud union workhouse and was also surgeon to the Post-Office and Admiralty. Mr. Cooke will be much missed in Stroud, where he was highly esteemed, and great sympathy is felt there with his widow and seven children.

Medical News.

UNIVERSITY OF LONDON.—At examinations held in May the following candidates satisfied the examiners:—

M.B., B.S. EXAMINATION.

Honours.—*Harold Garfield Bennett, St. Thomas's Hospital; ‡Gerald Tyler Burke and ‖Bertram Walter Cherrett, St. Bartholomew's Hospital; §John Henry Farbstein, University College; †John Athelstan Braxton Hicks, Westminster Hospital; §William Henry Miller, Guy's Hospital; *†‖§Henry John Nightingale (University medal) and †Alfred Charles Foster Turner, St. Thomas's Hospital; and *Charles Wilfred Vining, St. Mary's Hospital.

* Distinguished in Medicine. † Distinguished in Pathology.
‡ Distinguished in Forensic Medicine and Hygiene.
§ Distinguished in Surgery.
‖ Distinguished in Midwifery and Diseases of Women.

Pass.—Godfrey Frederick Ely Allison, Guy's Hospital; Charles James Armstrong-Dash, St. Bartholomew's Hospital; John Stanley Avery, University College, Bristol; Alfred Ball, University College; Alec Barber and Tom Bates, St. Bartholomew's Hospital; Ella Beales, Sylvia Rose Margaret Blackstone, and Mary Alice Blair, London (Royal Free Hospital) School of Medicine for Women; John Frederick Broughton, University College; Stanley William Randolph Colyer, Charing Cross Hospital; Eustace James Carey Dicks, St. Mary's Hospital; Kenelm Hutchinson Digby, Guy's Hospital; Allan Baines Fearnley and John Ferguson, St. Bartholomew's Hospital; Kenneth Mayoh Gibbins, St. Mary's Hospital; Elliott Thornton Glenny, St. Bartholomew's Hospital; Samuel Lewis Graham, University College; Arthur Donald Griffith, King's College; Leopoldine W. D. Griffiths, London (Royal Free Hospital) School of Medicine for Women; Sidney Wilfred Grimwade, St. Thomas's Hospital; George Hamilton, Guy's Hospital; Horace Bryden Hill, St. Bartholomew's Hospital; Frank Norman S. Hitchcock, St. Thomas's Hospital; Frank Percival Hughes, Guy's Hospital; Gwilym Gregory James, Westminster Hospital; Sidney Herbert James Kilroe, Victoria University; Herbert Stanley Knight, Guy's Hospital; Janet E. Lane-Claypon, D.Sc., London (Royal Free Hospital) School of Medicine for Women; Alexander Manuel, St. George's Hospital; Marian Mayfield and Emily Helen Morris, London (Royal Free Hospital) School of Medicine for Women; Frederic Miller Neild, St. Thomas's Hospital; Geoffrey Eugene Oates, St. Mary's Hospital; Catherine Payne, London (Royal Free Hospital) School of Medicine for Women; August Frederick Perl and Arthur John Scott Pinchin, St. Thomas's Hospital; John Mackay Piews, St. Bartholomew's Hospital; David Ranken, University of Durham; Frank Douglas Roberts, London Hospital; Cecil Frederick Robertson, Middlesex Hospital; Francis William Schofield, Victoria University; Henry Joste Smith, Guy's Hospital; Ronald Ernest Todd, St. Thomas's Hospital; James Aubrey Torrens, St. George's Hospital; Stuart William Jackson Twigg, University College; Joseph Unsworth, University of Liverpool; Thomas William Wade, Charing Cross Hospital; Norman Hamilton Walker, St. Bartholomew's Hospital; Thomas Edgar Walker, University of Liverpool; Robert James Waugh, St. Bartholomew's Hospital; David Wilson, St. Thomas's Hospital; Alfred William George Woodforde, St. Bartholomew's Hospital; and Carl Ernst Zundel, London Hospital.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Leonard Christopher Blackstone, University College; Emily Susan Cooke, London (Royal Free Hospital) School of

Medicine for Women; Reginald Lionel E. Downer, St. Bartholomew's Hospital; Thomas Scarbrough Dudding, London Hospital; Edward Henry Hugo, Charing Cross Hospital; Mary O'Brien, London (Royal Free Hospital) School of Medicine for Women; Evelyn Henry Bardens Oram, St. George's Hospital; Edgar Nelson Ramsbottom, Victoria University and University of Durham; and Harry Gordon Webb, St. George's Hospital.

Group II.—Laurence Ball, University of Birmingham; Walter Rowley Bristow, St. Thomas's Hospital; Thomas Edmund Ashdown Carr, Guy's Hospital; Herbert Stanley Chate, B.Sc., St. Mary's Hospital; David Morgan Davies, Charing Cross Hospital; Carel C. Alexander De Villiers, Guy's Hospital; Hendrik Houwink, London Hospital; Douglas Walter Hume, St. Bartholomew's Hospital; Alfred John Lee, University College; George William Lloyd, St. Bartholomew's Hospital; Clement Lovell, University College; John Clarke Mead, St. Bartholomew's Hospital; Emily Mary Spencer Mecredy, London (Royal Free Hospital) School of Medicine for Women; Edgar Lionel Robert Norton, Guy's Hospital; John Paulley, St. Bartholomew's Hospital; John George Phillips, University College and Guy's Hospital; Edward Selby Phipson, University of Birmingham; Russell John Reynolds, Guy's Hospital; Marie Simpson, London (Royal Free Hospital) School of Medicine for Women; Frank Standish, London Hospital; Robert Yelverton Stones, London Hospital; and Reginald Stephen Townsend, St. Bartholomew's Hospital.

B.S. EXAMINATION.

Pass.—John Acomb, University of Leeds; Dora Elizabeth Lidgett Bunting, London (Royal Free Hospital) School of Medicine for Women; Edward Cecil Brearey Ibotson, Guy's Hospital; Rees Phillips, Middlesex Hospital; Frank Tratman, M.D., London Hospital; and Hilda Kate Whittingham, London (Royal Free Hospital) School of Medicine for Women.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

UNIVERSITY OF CAMBRIDGE.—A grant of £150 has been made from the Balfour Fund to Mr. W. E. Agar of King's College in furtherance of his zoological expedition to the Paraguayan Chaco.—The degree of LL.D. *honoris causâ* is to be conferred on the King of Siam at a special congregation to be held by His Grace the Chancellor at Devonshire House on June 25th.—At a congregation on May 23rd the following degrees were conferred:—

M.B. and B.C.—H. F. G. Noyes, Caius.
M.B.—C. R. Crowther, St. John's; J. R. C. Greenlees, St. John's; and G. F. S. Bailey, Caius.
B.C.—A. I. Cooke, Caius; and R. F. Young, Christ's.

—The Rev. E. S. Roberts, Master of Gonville and Caius College, has been re-elected vice-chancellor for the ensuing academical year; Sir Isambard Owen, has been reappointed a governor of the University College of Wales, Aberystwyth; Mr. F. A. Potts, Trinity Hall, has been appointed assistant superintent of the Museum of Zoology; and Mr. Keith Lucas, Trinity, has been appointed an additional demonstrator in physiology.—Courses of lectures in pharmacology, pathology, protozoology, surgery, midwifery, medicine, and hygiene will be given at the Medical School during the Long Vacation. Syllabuses and time-tables are published in the *University Reporter* of June 4th. It is proposed to institute a paper in Heat and Chemistry as an alternative to "Paley's Evidences" or Logic in the previous examination.—The Vice-Chancellor has been authorised to accept a tender for the extension of the Cavendish Laboratory of Physics at a cost of £7135. A similar extension of the chemical laboratory, at a cost of £13,500, is to be proceeded with during the summer.—Professor Bradbury, Dr. G. N. Pitt, Professor W. Osler, and Dr. Rose Bradford have been appointed examiners in medicine; Dr. W. Rivers Pollock and Professor H. R. Spencer, examiners in midwifery; and Mr. T. H. Kellock, Professor H. G. Barling, Mr. Stanley Boyd, and Mr. L. A. Dunn, examiners in surgery for the ensuing academical year.—A complimentary banquet was given to Principal Donald MacAlister on June 4th in the combination room of St. John's College.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The annual meeting of the College was held on June 1st, when a very favourable report was submitted to the Fellows. During the year 17 candidates, having passed the examinations, were admitted to the Fellowship; 73 candidates, having passed the conjoint examination with the Royal College of Physicians of Ireland, received the diploma in surgery and midwifery; 29 candidates, having passed the conjoint examination with the Royal College of Physicians, received the conjoint diploma in public health; ten candidates, having passed the examinations, received the licence in dental surgery; and 64 candidates, having passed the conjoint preliminary examination with the Royal College of Physicians, received certificates. The obituary list showed the death of six Fellows, 51 Licentiates, and three Licentiates in Dental Surgery. There are at present living 15 Honorary Fellows, 466 Ordinary Fellows, 2908 Licentiates, six Honorary Diplomates in Public Health, 269 Ordinary Diplomates in Public Health, and 531 Licentiates in Dental Surgery.—A meeting of the College was held on June 3rd when the following were elected: President: Mr. Henry R. Swanzy. Vice-President: Mr. John Lentaigne. Council: Mr. William Stoker, Sir Charles A. Cameron, Mr. John B. Story, Sir Charles B. Ball, Sir Thomas Myles, Sir Arthur Chance, Dr. Richard D. Purefoy, Sir Lambert H. Ormsby, Mr. Henry G. Sherlock, Dr. R. Bolton McCausland, Mr. John S. M'Ardle, Mr. Robert H. Woods, Dr. R. Lane Joynt, Dr. Thomas Donnelly, Mr. William Taylor, Dr. Edward H. Taylor, Mr. R. Charles B. Maunsell, Dr. William Ireland de C. Wheeler, and Mr. D. Edgar Flinn.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.—The annual meeting and dinner of this association took place on May 31st. The former was held at the rooms of the Medical Society of London at 4 P.M., when the new scheme for the reconstitution of the University, as announced in the Draft Act, was discussed at considerable length and a motion unanimously carried in favour of the measure, subject to certain modifications in details on the lines suggested by the Northern and Southern councils of the association. The annual dinner, held at the Imperial Restaurant, Regent-street, London, W., took place in the evening at 7.30. The newly elected president, Dr. Charles W. Chapman, occupied the chair, supported by 63 members and guests. Excellent music was provided under the direction of Miss Jessica Leeson and contributed in no small degree to the success of the gathering.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on May 30th, Dr. F. H. Champneys being in the chair. A letter was received from the Privy Council transmitting an Order in Council approving the revised rules for the period ending Sept. 30th, 1909. A letter was considered from the Privy Council transmitting a copy of a letter from the medical officer of health of the city of Manchester with regard to a proposed additional rule that midwives should be compelled to take the temperature of patients at every visit. The Board decided that the Privy Council should be informed that the proposal will receive the careful consideration of the Board on the next revision of the rules. A letter was read from Mr. Framjee Gotla inquiring whether a teacher who has instructed a pupil by correspondence only is entitled to sign the certificate of instruction on the pupil's behalf. The Board decided that Mr. Gotla be informed that the terms of the certificate of instruction, and in particular the words "attended" and "lectures," appear to preclude the possibility of the signature of the certificate by a teacher whose three months' course of instruction has been given wholly or partly by correspondence. The following item in the report of the Midwives Act amendment committee was not reached before the adjournment of the Board: the committee recommends the Board to resolve that it is desirable to amend the Act so as to provide, among others, for the following alteration:—

Local supervising authorities and boards of guardians to be enabled to pay reasonable fees to medical practitioners sent for in emergencies in accordance with the rules of the Board, with power to recover the fee from the patient or her husband in suitable cases.

INTERNATIONAL NURSING CONFERENCE.—An International Nursing Conference will be held in Paris on June 18th, 19th, and 20th under the auspices of the International Council of Nurses. The General Director of the Assistance Publique, M. Mesureur, will act as president of the first session of the Conference and will give an address on the Work of the Assistance Publique for Nursing Education. He will be supported by Dr. Bourneville, Madame Alphen Salvador (who has established a training school for nurses in Paris on modern lines), Dr. Lande (administrator of civil hospitals in Bordeaux), and Dr. Anna Hamilton. Other sessions of the Conference will deal with the Practical Training of Nurses; the Public and Social Responsibilities of the Nurse; Professional Organisation; International Nursing Reciprocity, when a discussion on the opportunities for nurses in a foreign land will be opened by Miss C. Elston, an English trained nurse, now *directrice* of the Civil Hospital and Training School for Nurses at Tondu, Bordeaux; and the History of the Professional Nursing Press, when representatives of the German, Dutch, Danish, French, American, British, Canadian, and Australian nursing papers will take part in a debate. The members of the Conference will be received by the Municipal Council of Paris at the Hôtel de Ville, by the

Assistance Publique at the New Nursing College at the Salpêtrière Hospital, and at Chantilly by the Baroness James de Rothschild, while other invitations to visit hospitals and kindred institutions have been received.

LONGEVITY.—Mrs. Mary Davies of Ystradmynach attained the 103rd anniversary of her birthday on May 24th.

MEDICAL BARRISTERS.—The following names appear in the list of those who are to be "called" during Trinity Term, 1907:—By the Middle Temple: Mr. M. I. Finucane, M.R.C.S. Eng., L.R.C.P. Lond. By Lincoln's Inn: Mr. Meredith Young, M.D., M.S. Edin., D.P.H., of Stockport; and Mr. T. W. N. Barlow, M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. By the Inner Temple: Mr. A. R. Henry, of Guy's Hospital. Amongst those listed for call to the bar at the King's Inns, Dublin, to-day (Saturday, June 8th) is Mr. J. C. McWalter, M.D. Brux., F.F.P.S. Glasg.

HAMPSTEAD GARDEN SUBURB: A NOVEL FOUNDATION STONE-LAYING.—The committee of the Hampstead Tenants' Society has lost no time in getting to work. The first sod of the new building adventure was only cut by Mrs. S. A. Barnett on May 2nd, but the committee was able to invite each of the first 100 members of the society to lay a foundation-stone on Wednesday, June 5th. In connexion with the ceremony Mrs. Henry Jephson, the first member of the society, invited all the members to tea in the tea-gardens of the "Royal Oak" Hotel, Finchley-road. The Bath Stone Firms, Limited, gave the society 100 foundation-stones, each bearing the initials of a member, while a silver-plated trowel was handed to each member, with his or her initials and number in the society engraved on it, with which to perform a percentage of the ceremony, whose collective form was designed by the committee to demonstrate that the houses on their part of the estate are owned collectively. Mr. Henry Vivian, M.P., presided over the stone-laying ceremony, which was, unfortunately, performed for the most part in drenching rain.

THE GLASGOW UNIVERSITY CLUB DINNER.—The Glasgow University Club celebrated its twenty-first year of existence by a highly successful dinner at the Trocadéro Restaurant, London, W., on May 31st. Principal Donald MacAlister, in academic costume, occupied the chair and on his right hand was the Right Hon. Lord Kelvin, O.M., G.C.V.O., President of the club for this year. The principal guest was Sir Lauder Brunton. There was a large and distinguished gathering which included Sir Henry Craik, Sir John Batty Tuke, M.P., Sir Thomas McCall Anderson, Sir John Tweedy, Professor J. M. Thomson, Professor John Ferguson, Professor A. H. Young, Professor R. Latta, Professor William Jack, Professor W. P. Ker, Professor J. Harvard Biles, Professor W. S. McCormick, Professor D. W. Finlay, and Professor Blacklock Henderson, the Rev. David McEwen, D.D., Dr. George A. Heron, Dr. D. C. McVail, Dr. C. O. Hawthorne, Dr. Craig Henderson, Dr. Guthrie Rankin, Dr. R. Bishop, Dr. James McClure, Mr. J. W. T. MacAlister, and many others, the majority of whom were medical men. Principal MacAlister, in giving the toast of "The University and Club," referred to his unexpected translation from Cambridge on the lamented death of Principal Story. After enumerating some of the many distinguished sons of the University of Glasgow who have made a name for themselves in England and abroad in many spheres of work he made an appeal on behalf of the Students' Union at Glasgow, which was the sole expression of the University's solicitude for her students outside the class-rooms. An extension of its buildings was urgently needed and he appealed to all members of the club to help the students to raise the necessary £3500. If all who had succeeded in life through bursaries held at Glasgow would repay a part of their obligation another 2000 students might be provided for. Lord Kelvin, president of the club, on rising to reply, received an ovation. In a very vigorous and genial speech he said that from his earliest associations he could claim to be a true child of the University. He strongly advocated the acquisition of Latin and Greek as the first foundations of education and he rejoiced that the Scotch universities still insisted on the "inoculation" of all their students with at least small doses of logic and metaphysics before they took up the studies of their special faculties, and he humorously showed the advantages that they derived from the consequent "immunity" against philosophic errors in after-life. He insisted that the function of a university was to teach its students knowledge other than that for which they had a natural taste. Sir William Ramsay proposed "The Guests," on whose behalf Sir Lauder Brunton and Dr. George Ogilvie replied, and The Chairman's Health was given by Dr. Heron. During the evening a telegram was sent to Lord Lister cordially expressing the affectionate regard in which the club held him and assuring him of its gratitude for the interest which he had always shown in the club, of which he is an original member. The club forms an important link between the University of Glasgow and its graduates in England. Its prosperity is proved by a satisfactory balance-sheet for the last year.

GOLDEN WEDDING CELEBRATION.—Mr. and Mrs Samuel Stretton of Hampton House, Droitwich, celebrated their golden wedding recently at the Town Hall, Kidderminster. Among the many presents received were a large rose bowl from the subscribers to the Infirmary and Children's Hospital, a golden cup from their children (of whom there are 12), and a chased golden cream jug and sugar castor, the gift of the Mayor and Mayoress. Mr. and Mrs. Samuel Stretton went to Kidderminster soon after their marriage and removed to Droitwich a few years ago. They have always taken great interest in the welfare of the Kidderminster Infirmary, and the sick and suffering poor of the town and neighbourhood possess in them true friends. Soon after qualifying as M.R.C.S. Eng. in 1854 Mr. Stretton saw service as a volunteer in the Crimean war, and on his return home he soon acquired a large general practice. He is senior consultant surgeon of the Kidderminster Infirmary (at which institution one of his sons, Mr. Lionel Stretton, is the present senior surgeon) and a justice of the peace for the county of Worcester.

MEDICAL GOLF TOURNAMENT.—The Medical Golfing Society held a tournament on May 30th at Burnham Beeches Golf Club, the links of which club had been kindly placed at the disposal of the society. The challenge cup presented by Mr. Henry Morris for the best score against Bogey under handicap was won by Dr. F. J. Smith, who was "all square" with Bogey. Dr. Smith also secured the gold medal presented by the Medical Golfing Society to the winner of the cup, and he further carried off the first prize in Class II. for players with handicaps over 12, the second prize being gained by Dr. Seymour Taylor with a score of 1 down to Bogey. The prize offered for the best last 9 holes *v.* Bogey in Class II. was awarded to Dr. H. Lambert Lack with a score of 1 up. Class I. for players with handicaps of 12 and under attracted a numerous entry and resulted in Dr. R. J. Probyn-Williams, Dr. E. F. Buzzard, and Dr. C. M. Anderson, handing in scores of 1 down to Bogey. The best score *v.* Bogey for the last nine holes in Class I. was won by Mr. Harold A. Kidd who was 1 up. The foursome sweepstake was won by Mr. T. H. P. Kolesar and Mr. W. Rushton with 2 up on Bogey, the second place being tied for with all square by Mr. G. C. Bell and Mr. T. M. Young, Mr. H. M. Rigby and Mr. F. B. Cooper, and Dr. C. M. Anderson and Mr. J. R. Walker.

MEDICO-LEGAL SOCIETY.—Mr. Justice Walton presided over the first banquet of the Medico-Legal Society held on June 4th at the Holborn Restaurant, London, W.C. Sir W. J. Collins, M.P., in proposing the "Bench and Bar," suggested the advisability of founding a school of forensic medicine for the more precise study of medical jurisprudence. The toast was responded to by Lord Justice Kennedy who, in discussing the question of sentences for crimes in relation to lunacy and uncontrolled impulses, pointed out that the truest humanity did not always exist in unlimited mercy, and by Mr. W. English Harrison, K.C., who said that the common object in life for doctors and barristers was the elucidation of truth. "The Medical Profession" was submitted by Sir E. Clarke, K.C., who contrasted the comfortable conditions in which lawyers worked and the unfavourable circumstances that attended the labours of doctors in many instances; he expressed surprise that the medical profession had so many recruits and concluded that young men joined it because of their inclination to occupy their lives in doing good. The toast was acknowledged by Sir R. Douglas Powell, who showed how closely the two professions of law and medicine came into contact, especially in lunacy

and insurance work, and by Mr. Henry Morris, who described the efforts now being made to prevent unqualified medical practice. Sir Edward R. Henry, in proposing the toast of "The Medico Legal Society," explained fully the possibilities of the use of finger-prints, not only for police purposes, but for general work. Mr. Justice Walton, in replying, observed that the society could with advantage take up the subject of sanitary legislation. The toast of "Our Guests," given by Dr. F. J. Smith, was responded to by his Honour Judge J. A. Rentoul, and after Mr. Justice Walton had suitably replied to the toast of "The President," submitted by Mr. W. Blake Odgers, K.C., the proceedings terminated with hearty congratulations to the honorary secretary, Mr. R. Henslowe Wellington, on the success of the evening.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Butter and Margarine Bill.

THE Standing Committee of the House of Commons which has been dealing with the Butter and Margarine Bill decided by 26 votes to 19 not to accept Sir FRANCIS LOWE'S amendment imposing a 16 per cent. moisture limit on milk-blended butter. The rejection of the amendment was only secured after Sir EDWARD STRACHEY reiterated the undertaking of the Board of Agriculture that the substance which has hitherto borne that name would no longer be exposed for sale under any title containing the word "butter." By the regulations of the Board it would have to be described so as to make it clear to the intelligence of the ordinary working man and woman that the article they were buying was not butter in any sense of the word.

The Society of Apothecaries of London Bill.

The Society of Apothecaries of London Bill has been read a third time in the House of Commons and passed without amendment.

The Notification of Births Bill.

Several changes have been introduced into the Notification of Births Bill at the instance of the Government during its passage through a Standing Committee of the House of Commons. This measure was introduced by Lord ROBERT CECIL with a view to aid in the efforts being made to combat infantile mortality. It provided for the notification of births within 48 hours of their occurrence. Mr. BURNS, the President of the Local Government Board, when the Standing Committee met on Monday, announced that the Government, after considering the Bill fully, had come to the conclusion that certain alterations ought to be made in its terms. It thought that it should be optional and not compulsory for the local authorities to adopt it within their areas. However, the Local Government Board proposed to reserve powers to put the measure in force in the area of any local authority where it thought that obvious advantage must ensue. The Bill placed the period of notification at 48 hours. The Government proposed that the period should be reduced to 36 hours. Mr. BURNS then moved his amendment making the measure adoptive. Mr. JOHN WARD, Mr. TENNANT, and several other members of the committee protested against this change which they believed would take the strength out of the Bill. Mr. BURNS, however, expressed confidence that the large towns would adopt it. The great benefit of notification, he considered, would be that through the medical officer, ladies, public health visitors, and others would visit the mother, help her with advice, and, if advisable, induce her to give the child natural rather than artificial food. Mr. BURNS'S amendment was ultimately carried by 19 votes to 15. Other amendments, including the one reducing the period of notification to 36 hours, were also inserted in the Bill, which passed through committee and was reported to the House.

HOUSE OF COMMONS.

WEDNESDAY, May 29TH.

Tuberculosis in Cows.

Mr. WATT asked the Secretary for Scotland whether he would state, for the years 1900 to 1906 inclusive, the number of cows examined by veterinary surgeons under Article 3 of the Dairies, Cowsheds, and Milkshops Order, 1899, the number of cows certified under the said Article to be affected with tuberculosis of the udder, and the manner in which the cows so certified were disposed of.—Mr. SINCLAIR furnished the following written reply: The figures compiled from the returns made to the Local Government Board from 1900 to 1905 are as follows:—

—	Year.					
	1900	1901	1902	1903	1904	1905
Number of cows examined	20,075	22,604	26,382	29,970	29,305	38,309
Number of cows affected with tuberculosis of the udder	54	46	40	40	37	43

These figures, however, are only approximate and do not represent the exact number of cows certified as affected by tuberculosis of the udder, which I am unable to obtain. I have no information as to how the cows certified were disposed of.

Infantile Mortality.

Mr. RIDSDALE asked the President of the Local Government Board to give figures relating to the infant mortality in the boroughs of Battersea, Lambeth, Woolwich, Bradford, Burnley, Ashton-under-Lyne, Liverpool, and St. Helens.—Mr. BURNS replied by furnishing an elaborate table of statistics, from which the following figures are abstracted:—

Name of borough.	Year.	Deaths of infants. Number.	Deaths of infants. Per 1000 births.
Battersea ...	1904	706	146
	1905	550	114
	1906	583	126
Lambeth ...	1904	1328	147
	1905	1127	128
	1906	1086	131
Woolwich ...	1904	486	132
	1905	364	103
	1906	388	109
Bradford ...	1904	1048	167
	1905	873	144
	1906	904	152
Burnley ...	1904	625	233
	1905	465	174
	1906	612	215
Ashton-under-Lyne	1904	207	172
	1905	212	179
	1906	183	153
Dukinfield ...	1904	98	198
	1905	91	196
	1906	91	176
Liverpool ...	1897	4488	201
	1900	4247	186
	1904	4780	196
	1905	3762	154
	1906	4145	172
St. Helens ...	1904	578	174
	1905	430	132
	1906	489	156

THURSDAY, May 30TH.

Parish Midwives.

Mr. REMNANT asked the President of the Local Government Board whether he could state the number of midwives who were employed during the last or any recent period of 12 months as parish midwives; whether midwives so employed were regarded as Poor-law officers; and whether any order of the Board had been issued with regard to their appointment.—Mr. BURNS replied (by written answer): I am not in a position to give the information desired by my honourable friend. The midwives referred to would not usually be regarded as Poor-law officers. There is no order of the Local Government Board with regard to their appointment.

Inquest Fees.

Mr CLAUDE HAY asked the President of the Local Government Board whether he could state the number of inquests held on persons who died in London workhouses and infirmaries during the latest year for which the figures were available; the proportion of inquests held to the total number of deaths in such institutions, and the number of inquests held on persons over 60 years of age, and the proportion to the total number of deaths over that age; whether he could say what was the general practice in regard to the holding of inquests, and what were the fees paid to medical officers and coroners in connexion therewith.—Mr. BURNS furnished a written reply as follows: I have made inquiry but I do not find that any official returns give the particulars desired by the honourable Member. The subject of coroners and inquests is not within my province but I may state that the London coroners are paid fixed salaries and that a medical man who attends an inquest on a summons from the coroner is entitled under the Coroners Act, 1887, to a fee of one guinea for attending to give evidence at an inquest at which he has made no post-mortem examination, and of two guineas for making a post-mortem examination and attending to give evidence thereon.

Public Health in Scotland.

The House was engaged all day in discussing Scottish votes in Committee of Supply. Several matters relating to public health were raised on the vote of £3387 for the services and expenses of the Local Government Board in Scotland.

Mr. WEIR complained of the inadequacy of medical inspection in Scotland. The sanitary conditions which prevailed in the Island of Lewis, he said, called for increased vigilance on the part of the Local Government Board.

Mr. WATT made some observations on the irregularities of meat inspection in Scotland. Some localities did not carry out the instructions of the Local Government Board and the districts which did obey the instructions were placed at a disadvantage. He urged that the Board should be more strict in its regulations regarding the importation of chilled beef. It would be beneficial if a skilled veterinary surgeon were appointed to have the supervision of the whole of Scotland in regard to this matter.

Mr. GULLAND congratulated the Secretary for Scotland on the steps taken by the Local Government Board to check consumption. He believed that the excellent circular issued by the Board in March of last year would lead to good results. Deaths from the disease showed a decrease and he hoped the decrease would continue. The circular had asked the local authorities to adopt compulsory notification. Edinburgh was the first city to go in for it. He believed that many other authorities shrank from compulsory notification because they felt that it would expose the people who notified to a sort of boycott. He could assure the right honourable gentleman that the country agreed with

the policy of the Local Government Board for Scotland in doing everything possible to insist upon the local authorities taking every step to secure the notification of infectious disease. He hoped that the Board would do what it could to get local authorities to increase the number of women sanitary inspectors and women visitors who would be able greatly to help in the reduction of infantile mortality which was so serious a matter in Scotland.

Mr. SINCLAIR (the Secretary for Scotland) expressed his appreciation of the remarks of Mr. Gulland with regard to pulmonary tuberculosis in Scotland. With regard to the question of the Board's medical inspectors he might say that there were four inspectors who, though not of the same rank as the chief inspector, were collaborators with him. If an additional chief inspector were necessary a claim for such an officer would be put forward by the Local Government Board.

The vote was then agreed to.

On the vote of £3799 for the salaries and expenses of the Board of Lunacy,

Mr. MORTON asked for an explanation whether the Board was accomplishing everything which it ought to accomplish with the funds at its disposal. The honourable Member was addressing the committee at 11 o'clock when the debate automatically terminated.

FRIDAY, MAY 31ST.

The Sale of Unmatured Spirits.

Mr. HADDOCK asked the President of the Board of Trade whether he could state the amount per proof gallon that imported plain spirit contained of amylic alcohol (fusel oil); whether he was aware that this spirit never matured, and was said to be sold, coloured and flavoured, to represent brandy, rum, and British distillations; and, if so, whether His Majesty's Government would take any steps, by legislation, to prevent this.—Mr. RUNCIMAN (who replied) furnished the following written answer: The Board of Customs informs me that imported plain spirits are not examined with reference to the amount of fusel oil that may be present and that it has no information on the subject. It has no knowledge of such spirits being sold, coloured and flavoured to represent brandy, rum, and British distillations subsequent to delivery out of official custody.

TUESDAY, JUNE 4TH.

The Medical Officer to the Tokio Embassy.

Sir WILLIAM COLLINS asked the Secretary of State for Foreign Affairs whether the British Embassy at Tokio was a public institution within the meaning of the Medical Acts; whether a medical officer appointed to the Embassy ought to be a legally qualified medical practitioner; whether on the occasion of the last appointment to this office the vacancy was advertised or otherwise made known in Japan or in this country; and whether the gentleman now occupying the position of medical officer to the British Embassy at Tokio held any medical qualification entitling him to act as a legally qualified medical man on British territory or to practise in Japan.—Sir EDWARD GREY replied: As regards the first, second, and last parts of the question I am not prepared to make any statement involving an interpretation of the meaning of any portion of the Medical Acts but would refer the honourable Member to the last sentence of my reply to him of May 14th. In regard to the third part I may say that no advertisement was issued in the press but His Majesty's Ambassador reported at the time that he had made numerous inquiries in Great Britain, as well as in Japan, without, however, finding a suitable British candidate.

The Standardisation of Disinfectants.

Mr. REES asked the President of the Local Government Board whether he was aware that the Privy Council Order of July 27th, 1900, which permitted the sale without trial of fluids containing less than 3 per cent. carbolic acid or its homologues, on the ground that such fluids were not poisons within the meaning of the Pharmacy Act of 1868, had resulted in flooding the market with disinfectants containing less than 3 per cent. carbolic acid; and whether he proposed to take such action as might be necessary to prevent this and to insure the standardisation of disinfectants.—Mr. BURNS said, in reply: Liquids containing less than 3 per cent. of carbolic acid are, I understand, chiefly used as deodorants. They would not be likely to be used where in the case of an infectious disease disinfectants were supplied by the sanitary authority on the advice of the medical officer of health. My attention has not been drawn to an increased use of deodorants of the kind referred to since the Order of the Privy Council was made and it does not appear to me that I could take any action in the matter.

Mr. REES asked whether it was not the case that materials of this character were bought by the public under the impression that they were not only deodorants but disinfectants.—Mr. BURNS: If the honourable Member will supply me with further details I shall look into the matter.

The Inspection of Meat for Scotland.

Mr. WATT asked the Secretary for Scotland whether, in view of the facts that chilled meat, marked U.S., inspected and passed, was seized in Glasgow Meat Market on Feb. 18th and 20th and found unfit for human food; that this meat showed no evidence of having been previously inspected; and that United States' statistics showed that each inspector there has to examine the carcasses and viscera of at least 937 animals daily, he would take steps to insure greater precaution in admitting into Scotland this class of meat for human consumption.—Mr. SINCLAIR answered: I am not in a position to confirm the suggestion in my honourable friend's question as to the conditions under which meat is inspected in the United States. The Local Government Board for Scotland has no power to take any steps to insure greater precaution in the admission into Scotland of the class of meat referred to. I am informed that chilled and frozen meat does not come directly to Scotland from the United States but that it usually goes to London or Liverpool and is consigned to the Scottish centres from these ports.

The Election of a Medical Officer in Ireland.

Mr. LONSDALE asked the Chief Secretary to the Lord Lieutenant of Ireland whether the Local Government Board had ordered a sworn inquiry into the election recently of a medical officer by the Skibbereen board of guardians, in view of allegations of bribery and corruption which had been made publicly.—Mr. CHERRY (the Irish Attorney-General), on behalf of Mr. BIRRELL, replied: The answer is in the affirmative.

The Public Health Bill.

Mr. BRIGG asked the Prime Minister whether, in consequence of the importance to local authorities in framing their Bills for next session, he would facilitate the passing into law as speedily as possible of the Public Health Bill.—Sir HENRY CAMPBELL-BANNERMANN replied: No undertaking can be given at present about this Bill but the Government is quite alive to its importance.

WEDNESDAY, JUNE 5TH.

The Purity of Water-supplies.

Mr. MACLEAN asked the President of the Local Government Board whether he was now in a position to state his intentions with regard to the representations made to him last session as to the urgent need for an inquiry into the necessity for the protection and development of water-gathering grounds and other sources of water-supply, the allocation of such sources on a comprehensive and equitable basis, and the general control and supervision of this subject by a central and properly qualified body or department.—Mr. BURNS replied: I have had under consideration the recommendations made in the third report of the Royal Commission on Sewage Disposal with regard to the prevention of the pollution of water and other matters such as those referred to in the question, and I had hoped that it would be practicable for me to propose legislation on this subject during the present session. I am afraid, however, that, looking to the demands on the time of the House for other business, it will not be possible to proceed with the matter this year, but I shall not lose sight of it.

Medical and Dental Companies.

The Select Committee of the House of Lords which was appointed some time ago to consider the Prohibition of Medical Practice by Companies Bill and the Dental Companies (Restriction of Practice) Bill met on Monday for the purpose of hearing evidence. Lord HYLTON was in the chair and the other members of the committee present were Lord LUDLOW, Lord FALKLAND, Lord KNUTSFORD, and Lord COLEBROKE.

The first evidence taken was tendered on behalf of the General Medical Council which has brought the Bills forward. Dr. DONALD MACALISTER, the President of the General Medical Council, and Mr. TOMES, one of the members, appeared to support the Bills by their evidence.

Mr. C. S. TOMES, F.R.C.S.Eng., L.D.S., was the first witness. He handed in a general statement of the views of the General Medical Council, which he and Dr. MacAlister appeared to support. In this statement it was submitted that among the duties imposed on the Council by the Medical Act of 1858 was that of maintaining an accurate register of legally qualified medical practitioners and of purging that Register from time to time of persons who by infamous professional conduct were adjudged unfit to remain on the Register. The main object of the Register was to enable the public to distinguish qualified from unqualified practitioners and this was so stated in the preamble to the Act. An unregistered practitioner could not recover fees and was disqualified from holding any public medical appointment, and was subject to penalties if he used any title calculated to lead the public to suppose that he was a duly qualified practitioner registered under the Act. Very similar powers were given to the Council by the Dentists Act of 1878 in respect of persons qualified to practise dental surgery. The Privy Council had under these Acts certain powers of supervision over the General Medical Council in the exercise of its powers, and could exercise the powers of the General Medical Council in case of default. The practice of medicine and dental surgery, Mr. Tomes submitted, was obviously entirely a personal matter. A person was qualified to practise by having gone through certain courses of study and passed certain examinations, and under the Medical and Dental Acts the Council had cast upon it the duty of maintaining the necessary standard and of reporting to the Privy Council if the medical course and examinations of any body empowered to grant medical or dental qualifications were not satisfactory. It was obviously not in contemplation when the Acts were passed that any but individuals *could* practise medicine, surgery, or dental surgery. A corporation or company could not enter on a course of study or pass an examination or attend to patients. The whole idea of corporate qualification was absurd. Unfortunately, however, the Companies Acts had been seriously abused. Joint stock companies had been registered which in many cases deliberately stated in their memorandum of association that one of their objects was to practise medicine and surgery, and many more to practise dentistry or dental surgery. Other companies, without stating clearly their object, did in fact carry on a medical or dental practice. In some cases the title of the company showed the object for which it was registered. In other cases there was nothing in the title to suggest the object. It would naturally be asked why, if the law did not forbid an unqualified person to practise if he could find patients, persons who were not qualified should have recourse to the Joint Stock Companies Acts. There were several reasons why this was done. In the first place, they thereby avoid the penalties imposed by the Acts. By Section 40 of the Act of 1858 any person who wilfully and falsely took or used the name of a physician, doctor of medicine, or any name, title, or addition or description implying that he was registered under the Act, or was recognised by law as a medical practitioner or apothecary, was liable on conviction to a fine of £20. There was a similar provision in the Dentists Act of 1878 to prevent the use of the title dentist or dental practitioner by unqualified practitioners. It had been held by the House of Lords that the word "person" did not include a company where the context showed that personal qualifications were necessary, and therefore a joint stock company could not be proceeded against under the Act, although it used a false and misleading title which led ignorant people to imagine that they were consulting duly qualified medical practitioners. This was a serious matter when it was remembered that the main object of the Act was to protect the public from being imposed upon. There was, however, another object aimed at by those who used the Joint Stock Companies Acts for this purpose. These companies were rarely, if ever, *bonâ fide* companies with a substantial subscribed capital and a large number of shareholders. They were usually formed with a perfectly nominal share capital, usually by one man, who was for all practical purposes the

company. If owing to negligence the persons employed by the company to prescribe or attend to patients or to perform dental or other operations were negligent and rendered the company liable to damages there is no substantial person to sue; and it surely was never the intention of the Legislature that the privilege of carrying on business with limited liability should be enjoyed by persons who thus sheltered themselves from the liability which attaches to the individual practitioner. Then, again, practice by joint stock companies encouraged greatly the objectionable practice known as "covering." A qualified medical practitioner might be included among the shareholders or employed as manager by the company; but as these companies usually advertised extensively and carry on business at many different places they almost always employed a number of unqualified persons who sheltered themselves under the name of the qualified employee, and are "covered" (as it was termed) by him. The offence of "covering" was one difficult to prove even in the case of individuals, and it was much more difficult in the case of companies. It was submitted that joint stock companies should be prohibited from carrying on medical or dental practice, simply on the ground that it was an abuse of the Acts to use them for this purpose. The machinery of the Joint Stock Companies Acts, Mr. TOMES further submitted, might as reasonably be applied to the performance of the duties of a barrister or solicitor or a clerk in holy orders as to those of a medical man or dental surgeon. The fact, however, that medical and dental practice by companies led to serious evasions of the Medical and Dentists Acts, and exposed ignorant and poor people to serious risks was, it was submitted, a conclusive argument in favour of these Bills. It only remained to give a few concrete examples which had actually occurred in recent years, which showed conclusively that these evils were not imaginary or slight. In June, 1904, the Registrar of Joint Stock Companies furnished to the House of Commons, at the instance of Sir JOHN TUKE, a return of the companies registered under the Companies Act for the specific purpose of carrying on medical and dental practice. The witness handed in this return. He proceeded to state that while many of these companies were instances of the abuse of the Joint Stock Companies Acts as previously described, the return included some *bonâ fide* companies incorporated for a legitimate purpose, while it did not include many of the most pernicious companies because there was nothing in their titles and often nothing in the description of the business they were avowedly formed to carry on to indicate their real character. In February, 1905, the Registrar of the General Medical Council forwarded to the Privy Council Office, at the request of the Lord President, particulars of various medical and dental companies registered under the Joint Stock Companies Acts which offered professional advice to the public, but which were not included in the Parliamentary return. The operations of not a few of these companies had been before the courts, or had been the subject of inquiries before coroners, or had been brought before the General Medical Council in their judicial capacity. In conclusion, he stated that in June, 1902, a firm of company registration agents issued a circular very extensively pointing out the advantages to be secured by persons not licensed under the Dental Acts by carrying on their business in the form of limited companies, by which "the prohibitive conditions of the Dental Acts may be entirely avoided."

Lord LUDLOW: At present there is no liability on unqualified persons at all?

Mr. TOMES: The unqualified person cannot recover fees.

Lord LUDLOW: There are no liabilities on the unqualified person who sets up practice.

Mr. TOMES: Unfortunately not. There is, of course, the prohibition to use a medical title.

Lord LUDLOW: Under the Bill dealing with dental companies qualified persons would have the right to form a dental company.

Mr. TOMES: I do not think that they would do it.

Lord LUDLOW: At any rate, they would have the right to do it.

In answer to Lord KNUTSFORD, Mr. TOMES admitted that the main object of the General Medical Council in promoting these Bills was to place companies in the same position as private individuals who were unqualified.

Lord KNUTSFORD: Would the Council be satisfied if a short clause were enacted saying that the word "person" in the Act of 1858 would include companies?

Mr. TOMES: It would prefer provisions like those in the Bill which has been very carefully considered. These companies have been formed for an illegitimate purpose.

Lord KNUTSFORD: If you extend your powers against companies, why have you not asked further powers against unqualified persons to prevent them acting?

Mr. TOMES: Owing to the difficulty of getting legislation through. In every British colony I may say that unqualified practice is prohibited.

Dr. DONALD MACALISTER, Principal of the University of Glasgow and President of the General Medical Council, was the next witness. He said that he concurred in all particulars in the statement of the Council's views which had just been submitted to the committee by Mr. Tomes. He ought to say at the outset that this matter of unqualified practice by means of companies had been engaging the serious attention of the General Medical Council for ten years. The abuses which were occurring by this company practice were brought to the notice of the Council by the occurrence of particular cases which it attempted to check by the machinery of the Medical Acts, but it was unable to do so owing to the decision of the House of Lords referred to in the statement submitted by Mr. Tomes. A company was not a "person" and could not be restrained in the same way as an individual unqualified person. He felt strongly that the Companies Acts were being grossly abused in affording protection to unqualified persons. An unqualified individual might practise. There was nothing to prevent him. However, there were certain things that he could not do. He could not call himself a surgeon, a dentist, or a physician. He could not sign medical certificates, nor could he hold a public appointment. He was not exempted from various civic liabilities as surgeons and physicians were. The company, however, gave certain protection to unqualified men. It was limited in its liability to the amount of its shares, supposing malpractices were found against it and damages were awarded. The damages could not exceed the amount of the shares. He had found also that the sanction granted by the present state of the law to unqualified persons through the companies had a serious effect as regarded their dealings with the public. The Companies Acts were not intended for any other purpose than to afford financial encouragement for legitimate industry, and he could not think they were intended to give their quasi-legal status to a body of persons who could not otherwise exercise the functions of the medical profession. That was the view which Lord Halsbury took when he included clauses on this subject in his Bill of 1900. That Bill set forth that it should be unlawful for a company to carry on the profession or business of a surgeon, physician, dentist, or midwife. These clauses were struck out in the House of Commons on the ground that they were not germane to the other purposes of a Companies Bill. No objection was taken to them on principle.

The CHAIRMAN: I think that successive Governments, through the Presidents of the Council of the day, have never offered any opposition to your endeavours to get measures of this kind passed?

Dr. MACALISTER: I should be able, if your lordships desire it, to lay before you certain communications from the law officers of the Crown urging the General Medical Council to bring this matter forward.

The CHAIRMAN: I think we should like a return of that correspondence. Now, Dr. MacAlister, have you any concrete cases to put before the committee?

Dr. MACALISTER: The number of concrete cases with regard to medical practice is smaller than is the case with dental. There had been on several occasions threats on the part of persons who had been struck off the Medical Register for disgraceful and infamous conduct in a professional respect to go into practice again as a company and so defy the Council.

The CHAIRMAN: You want to prevent the materialisation of these threats?

Dr. MACALISTER said that they were rarely or never carried out. The General Medical Council exercises the power of putting a man back on the Register. He pointed out in these cases that any such action as that threatened would be a final bar to the restoration of the offending practitioner. That had been successful and they had heard no more of the threats. He thought that in one or two cases the practitioner had restored himself to good repute. The General Medical Council had used its powers more for preventive purposes than for punitive. As regarded unqualified persons who had taken medical titles there was the case of I. Waters and Sons, Limited, which was registered in 1897 in Dublin to carry on (*inter alia*) the business of physicians and surgeons. The subscribers were six members of the Waters family (three of them ladies) and a solicitor. There was no qualified practitioner among the signatories. The World's Dispensary Medical Association was another similar case. Of the seven subscribers six had the letters M.D. after their names and the other was described as superintendent. All had addresses in the United States except one, who is described as living in London. None of these names were on the Medical Register and none were legally qualified to practise pharmacy. This company was wound up in 1900. There was also the case of the "Dr. Bland" Company, Limited. This company was registered in April, 1899, in Dublin, the object being to carry on or practise the profession or business of medical doctors, physicians, surgeons, apothecaries, pharmaceutical chemists, dentists, midwives, and dry goods and patent medicine vendors. There was no such person as Dr. Bland registered as resident in Ireland.

The CHAIRMAN: Is it not the case that the poorer classes are liable to be deceived in medical matters by companies?

Dr. MACALISTER: The poorer classes are deceived. The information which has come to the General Medical Council proves it. Circulars had been issued broadcast advertising these companies. He would like to direct the attention of the committee to the case of the General Council of Safe Medicine, Limited. This company was limited by guarantee, each member being liable for not more than £5. The company had therefore no capital. Its object was to grant degrees, scholarships, &c., in the magnetic and botanic system of Safe Medicine, the highest diploma conferring the distinction of Doctor of Botanic Medicine—distinguished by the letters M.D. (b.c.). The subscribers were a clergyman, a merchant, and five persons describing themselves as medical herbalists. On August 8th, 1894, proceedings were taken against the company and 14 managers by the Attorney-General at the relation of the General Medical Council and the company and managers submitted to an injunction restraining them from issuing or conferring any degree or diploma of M.D. (b.c.) or other like degree or diploma purporting to qualify or authorise any person to treat disease. The General Medical Council objected to the machinery of the Board of Trade being called into play to give a quasi-legal sanction to companies which were bogus companies and frauds.

Lord LUDLOW: A company might be formed of qualified persons to carry on business as medical men. Would you object to that?

Dr. MACALISTER: I would only say that the point has not been brought before me. It seems to be against the public interest that the law should step in to limit their liability. There should be a personal responsibility to the public maintained.

The CHAIRMAN: You hold the personal responsibility of the medical man would be weakened if he were in a company?

Dr. MACALISTER: I do. He further admitted, in answer to Lord KNUTSFORD, that the Bill with regard to medical companies incidentally prevented the qualified men from forming a company. He thought, however, that it was good that seven qualified men should not form a company because that would limit their pecuniary liability.

Lord KNUTSFORD: It appears to me that this Bill would prevent two men both qualified carrying on business in company.

Dr. MACALISTER: It would prevent them carrying it on as a limited liability company but not from carrying it on in partnership.

Lord FALKLAND: Do you know of a case of qualified medical men or dentists forming themselves into a company?

Dr. MACALISTER: I have never heard of one. None has come to our notice. He went on to say that he wished to emphasise the danger which had arisen from the abuse of the machinery of the Companies Acts. If he would quote a circular which had been issued by a firm of company registration agents the committee would see what he meant. It ran as follows:—

"*Private and Confidential.*

"DEAR SIR,—You may possibly be aware that there are rumours of further stringent legislation in connexion with the carrying on of businesses allied to dentistry ('artificial teeth manufacturing,' &c.) by persons not licensed under the Dental Acts and we take the opportunity of pointing out to you that numerous and important advantages may be secured by carrying on such businesses in the form

of limited companies under the Companies Act, 1862-1900 while the prohibitive conditions of the Dental Acts may be entirely avoided. This matter deserves the serious consideration of all who are interested in such business, seeing that the contemplated legislation would probably be aimed directly at them, with the view of rendering their present methods illegal. For obvious reasons, it is inadvisable for us to go fully into the matter in this letter, but we shall be glad to give you the fullest information on the subject, if you desire it, without charge, or to make an appointment for a personal interview here. In addition to the benefits to be gained by avoiding the onerous conditions of the Dental Acts, substantial advantages accrue by carrying on business as a limited company from the general trader's point of view. These are briefly referred to in our booklet, 'Limited,' a copy of which we have the pleasure of enclosing, and we would particularly direct your attention to page 7, where an illustration is given of a 'private' or 'one-man' company. We shall be glad to hear from you upon this subject. All communications will be treated as *strictly confidential*."

Dr. MACALISTER said that he would not give the name of the company as he did not want to advertise it.

In answer to Lord LUDLOW, Dr. MACALISTER admitted that the Dental Bill now before the committee would allow a number of qualified men to form a company.

Lord LUDLOW pointed out that in the case of Lord Halsbury's Bill it was proposed that it should be unlawful for a company to carry on the profession of surgeons, physicians, dentists, or midwives.

The CHAIRMAN: Why do the terms of the present Bill differ from the Bill brought forward by Lord Halsbury?

Dr. MACALISTER: The legal advisers of the General Medical Council came to the decision that we should proceed on the lines of the Bill now before your lordships. It appeared that in the House of Commons strong representations were made on behalf of certain dental interests to the effect that there were perfectly legitimate corporations formed to practise dentistry on the mechanical side of the profession and they would be hampered if this absolute prohibition were insisted on. That was a matter upon which great difference of opinion existed in the dental profession. Their counsel had advised them to get rid of the great mischief of treatment by unqualified persons. They accordingly put forward the Dental Bill in its present form to get rid of opposition. They asked their lordships for the minimum which touched them most in order to get rid of the maltreatment of the public.

Lord KNUTSFORD: Do you approve of the sections now framed in the Dental Bill?

Dr. MACALISTER: So far as the sections are framed they will prevent maltreatment of the patient by the unskilled person.

Lord LUDLOW: In your opinion do you approve of there being such a thing as a dentist's company? I want your personal opinion.

Dr. MACALISTER: I certainly do not approve of it.

Mr. W. BROMFIELD PATERSON, F.R.C.S. Eng., L.D.S., chairman of the Representative Board of the British Dental Association, was the next witness. He submitted that the carrying on of dental work by a company did not fulfil any useful purpose other than profit to the company and was detrimental to the public interest. The companies which supplied dentures extracted teeth and did other things for preparing the mouth; but, generally speaking, this was done by unqualified persons who made their practice subsidiary to the sale of dentures. If that was the main object of their business it was obviously to their interest to take out as many teeth as possible, regardless of the patient's real requirements, in order that dentures might be sold. That that was done in the most flagrant manner was well known. In all cases dental companies advertised profusely and generally speaking were unscrupulous in making extravagant professions about the skill of their operators. By means of these statements they attracted people away from qualified men. So far as possible dental companies ought to be prohibited by law. If it was impossible to deal thus with existing companies the formation of dental companies in the future ought strictly to be prohibited. He thought that the Dental Bill before the committee ought to be strengthened in many important respects.

Mr. W. H. DOLAMORE, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S., late honorary secretary to the British Dental Association, also urged that the Dental Bill should be made more stringent. He had come across many cases of maltreatment of patients by unqualified men. He had objections even to companies formed by qualified men as he feared that the proprietors of a company would in course of time become unregistered men. The best men in the dental profession would not form companies.

Mr. A. C. CURTIS-HAYWARD, solicitor to the British Dental Association, also gave evidence. He asked that the Dental Bill should be made more strict in its terms so as to check company practice. He thought that Bill would be mischievous to the extent that it gave companies any status at all. He would infinitely prefer the clauses in Lord Halsbury's Bill to the present measure.

Mr. LEONARD MATHESON, who was President of the British Dental Association last year, was also examined. He feared that the Dental Bill in its present form would do more harm than good. It would give companies a certain legal status. He felt strongly that practice by companies, even of qualified men, was detrimental both to professional and public interests and reduced the dentist to the position of a dividend-making machine.

The committee then adjourned.

BOOKS, ETC., RECEIVED.

AMERICAN CLIMATOLOGICAL ASSOCIATION, Philadelphia (Secretary and Treasurer, GUY HINSDALE, M.D., Hot Springs, Va.)

Transactions of the American Climatological Association. For the Year 1906. Vol. XXII. Price not stated.

ASH AND CO., LIMITED, Printers, Southwark, London, S.E.

Guy's Hospital Nursing Guide, Handbook of Nurses' League, and Register of Nurses Trained at Guy's Hospital. 1907. Fourth Issue. Price 1s. 6d.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Nouveau Traité de Chirurgie Clinique et Opératoire. Publié en Fascicules sous la Direction de A. Le Dentu et Pierre Delbet.

I. Grands Processus Morbides. Traumatismes, Infections, Troubles Vasculaires et Trophiques, Cicatrices. Par Pierre Delbet, Professeur Agrégé à la Faculté de Médecine, Chirurgien de l'Hôpital Laennec, M. Chevassu, Prosecteur de la Faculté de Médecine de Paris, A. Schwarz, Ancien Prosecteur, Chef de Clinique Chirurgicale de la Faculté de Médecine, et V. Veau, Ancien Prosecteur, Chirurgien des Hôpitaux de Paris. Prix, broché, Frs.10; cartonné, Frs.11.50.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

A Dictionary of Medical Diagnosis. A Treatise on the Signs and Symptoms observed in Diseased Conditions. For the Use of Medical Practitioners and Students. By Henry Lawrence McKisack, M.D., M.R.C.P. Lond., Physician to the Royal Victoria Hospital, Belfast. Price 10s. 6d. net.

BLACKIE AND SON, LIMITED, 50, Old Bailey, London, E.C.

The Laws of Health: a Handbook on School Hygiene. By Carstairs C. Douglas, M.D., D.Sc. (Public Health), F.R.S.E., Lecturer on the Laws of Health to King's Students in Training, Glasgow University; Professor of Medical Jurisprudence and Hygiene, Anderson's College Medical School. Price 3s. net.

BUMPUS, JOHN AND EDWARD, LIMITED, 350, Oxford-street, London, W.

Other Fragments from A Piece of Delf. By H. M.-J. Price not stated.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D., F.R.C.P., Physician to and Lecturer on Medicine at Guy's Hospital, Examiner in Medicine to the University of London, Editor of "A Text-book of Pharmacology and Therapeutics." Tenth edition. Price 6s. 6d. net.

FISCHER, GUSTAV, Jena.

Funktionelle Behandlung der Skoliose. Von Professor Dr. Klapp, Bonn. Price M.3.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

Manual of Midwifery. By W. E. Fothergill, M.A., B.Sc., M.D., Lecturer in Obstetrics, the Victoria University of Manchester, Assistant Gynæcologist to the Northern Hospital for Women and Children and to the St. Mary's Hospitals for Women and Children. Fourth edition. Price not stated.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. IV., Gum-Resins to Intussusception. Price not stated.

G. P. PUTNAM'S SONS, New York and London.

A Manual of Prescription Writing. By Matthew D. Mann, A.M., M.D., Professor of Obstetrics and Gynæcology in the Medical Department of the University of Buffalo. Revised by Edward Cox Mann, M.D., Lecturer on Obstetrics, Medical Department of the University of Buffalo. Sixth edition, revised, enlarged, and corrected according to the U.S. Pharmacopœia of 1906. Price 4s. net.

The Muscles of the Eye. By Lucien Howe, M.A., M.D., Professor of Ophthalmology, University of Buffalo, Member of the Royal College of Surgeons of England. In Two Volumes. Volume I. Anatomy and Physiology, including Instruments for Testing and Methods of Measurement. Price 16s. net.

HEALTH RESORTS BUREAU, 27, Chancery-lane, London, W.C. (GALIGNANI LIBRARY, Nice.)

Some Summer Resorts in the South of France. By John W. Potter, Fellow of the Royal Geographical Society, Author of "Around Nice," &c. 1907. Second edition, enlarged. Price 1s. 6d. net or 2 francs.

KIMPTON, HENRY, 13, Furnival-street, Holborn, London, E.C. (STENHOUSE, ALEXANDER, 40 and 42, University-avenue, Glasgow.)

Medical Philosophy. Man's Peculiarities, Weaknesses, Diseases, Degeneration, and Remedies. Showing the Simplicity of the Science of Health and Disease, as Taught by the Best Writers in all Ages, in all Parts of the World. By W. Russell. Price 21s. net.

LEWIS, H. K., 136, Gower-street, London, W.C.

Lists of Muscles for Electrical Testing. Price 2s. 6d. net.

MCCORQUODALE AND CO., LIMITED, Cardington-street, London, N.W.

Metropolitan Asylums Board. Annual Report for the Year 1906. (Ninth year of issue.) Price 5s.

MACLEHOSE, JAMES AND SONS, Glasgow.

On the Evolution of Wound-treatment during the last Forty Years, Being the Dr. James Watson Lectures delivered at the Faculty of Physicians and Surgeons of Glasgow in February, 1906. By Sir Hector C. Cameron, Professor of Clinical Surgery in the University of Glasgow, lately President of the Faculty of Physicians and Surgeons of Glasgow. Price not stated.

MASSON ET CIE., 120, Boulevard Saint-Germain, Paris.

Les Venins, les Animaux Venimeux, et la Sérothérapie Antivenimeuse. Par A. Calmette, Membre Correspondant de l'Institut et de l'Académie de Médecine, Directeur de l'Institut Pasteur de Lille. Price Fr.12.

MERCK, E., Darmstadt.

Bericht über Neuerungen auf den Gebieten der Pharmakotherapie und Pharmazie. 20 Jahrgang. 1906. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, London, W.C.

The Cause and Prevention of Beri-Beri. By W. Leonard Braddon, M.B., B.S., F.R.C.S., State Surgeon, Negri Sembilan, Federated Malay States. Price 21s. net.

Marriage and Disease. Being an Abridged Edition of "Health and Disease in Relation to Marriage and the Married State." Edited by Professor H. Senator and Dr. S. Kaminer. Translated from the German by J. Dulberg, M.D. Price 10s. 6d. net.

Tropical Medicine. With Special Reference to the West Indies, Central America, Hawaii and the Philippines. Including a General Consideration of Tropical Hygiene. By Thomas W.

Jackson, M.D., Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia; Member of the American Society of Tropical Medicine; lately Captain and Assistant Surgeon, United States Volunteers. Price 17s. net.

Medical Diagnosis. A Manual for Students and Practitioners. By Charles Lyman Greene, M.D., Professor of the Theory and Practice of Medicine in the University of Minnesota; Attending Physician, St. Luke's Hospital, the City Hospital, and the St. Paul Free Dispensary. Price 13s. 6d. net.

RICHARDS, E. GRANT, 7, Carlton-street, London, S.W.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Medland. In Twenty Parts. Part V. Price 7s. 6d. net each part.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Teetotalism Analysed. By H. F. Feuerbeerd of Oporto. Price 6d.

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Étude Expérimentale de la Pleurésie Séro-Fibrineuse Tuberculeuse. Par M. le Docteur P. Cartier. (Travail du Laboratoire de M. le Professeur Debove à l'Hôpital Beaujon.) Price not stated.

SUTTON, ROBERT, 43, The Exchange, Southwark-street, London, S.E.

The Microscope and How to Use It. A Handbook for Beginners. Revised and enlarged. By T. Charters White, M.R.C.S., L.D.S., F.R.M.S., late President of the Quekett Microscopical Club. With a Chapter on the Marine Aquarium. Illustrated with photomicrographs by the Author. With a Chapter on Staining Bacteria, by Maurice Amsler, M.B., B.S. Lond. Price 3s. net.

SWAN SONNENSCHEIN AND CO., LIMITED, 25, High-street, Bloomsbury, London, W.C.

The Girls' School Year Book (Public Schools). With the Index of Schoolmistresses. Second year of publication. 1907. Issued under the direction of the Editors of "The Public Schools Year Book." Price 2s. 6d. net.

"THE GUARDIAN" OFFICE, 5, Burleigh-street, Strand, London, W.C.

Our Sons: Their Start in Life. With two Articles on Professions and Occupations for Women. Second edition. Reprinted from *The Guardian*. Price 2s. 6d.

TURNEY, F. S., 22, Paternoster-row, London, E.C.

Medical Priestcraft, a National Peril. By John Shaw, M.D. Lond., Member of the Royal College of Surgeons, England; lately Member of the Royal College of Physicians, London, and Physician for Diseases of Women, North-West London Hospital; Fellow (late Vice-President) of the British Gynæcological Society; Fellow of the British Electro-Therapeutic Society. Price 5s. net.

Cancer: a Working Theory for its Prevention and Cure. By John Shaw, M.D. Lond. Price 1s. net.

YEAR-BOOK PUBLISHERS, Chicago. (G. GILLIES AND CO., 28, Gibson-street, Hillhead, Glasgow.)

The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D. Volume I.: General Medicine. Edited by Frank Billings, M.S., M.D., Head of Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Series 1907. Price 5s. (Price of the complete series of 10 volumes per annum, £2 2s. net).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

BENNETT, H. G., M.B., B.S. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

BRISTOW, W. R., M.R.C.S., L.R.C.P. Lond., has been appointed to the Throat Department at St. Thomas's Hospital.

BURGESS, A. S., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Ophthalmic House Surgeon at St. Thomas's Hospital.

BUTLER, G. G., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

CARLETON, H. H., M.B., B.Ch. Oxon., has been appointed to the Children's Surgical Department at St. Thomas's Hospital.

CHURCHILL, S., M.B., B.C. Cantab., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

COUTIE, W. H., M.B., Ch.M. Melb., has been appointed Medical Officer to the Callan Park Hospital, Balmain, New South Wales.

DAWES, H. E. T., M.R.C.S., L.R.C.P. Lond., has been appointed to the Ear Department at St. Thomas's Hospital.

DUNKLEY, R. V., M.B., B.S. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

FIRTH, A. C. D., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

GAMLEN, R. L., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

HAYWARD, W. T., M.R.C.S., L.K.Q.C.P. Irel., has been appointed a Member of the Board of Management of the Adelaide Hospital, Australia.

HEWETT, F. S., M.B., B.C. Cantab., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

HILL, A. W., M.D. Brux., has been appointed a Member of the Board of Management of the Adelaide Hospital, Australia.

HODGSON, GEORGE JAMES, L.R.C.S., L.K.Q.C.P. Irel., has been appointed a Member of the Medical Board of Victoria, Australia.

HOWITT, A. B., M.B., B.C. Cantab., has been appointed Senior Casualty Officer to St. Thomas's Hospital.

HUGGINS, G. M., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

ILES, A. J. H., M.R.C.S., L.R.C.P. Lond., has been appointed to the Electrical Department and X Ray Department at St. Thomas's Hospital.

MACDONALD, S. G., M.B., B.C. Cantab., has been appointed Resident House Surgeon at St. Thomas's Hospital.

MELVILLE, STANLEY, M.D. Brux., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

MORT, GEORGE CECIL, M.B., Ch.B. Vict., has been appointed Resident Medical Officer at the Handel Cossham Memorial Hospital, Kingswood, near Bristol.

MURPHY, THOMAS, M.D., M.S. Melb., has been appointed Surgeon to Out-patients at St. Vincent's Hospital and Honorary Surgeon to In-patients in the Gynæcological Department, Victoria, Australia.

NEILD, F. M., M.B., B.S. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

NIGHTINGALE, H. J., M.B., B.S. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

PAGE, C. M., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

PHILPOT, H. A., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

PINCHIN, A. J. S., M.B., B.S. Lond., has been appointed to the Ear Department and to the Skin Department at St. Thomas's Hospital.

PURDY, J. S., M.D., C.M. Aberd., D.P.H. Camb., has been appointed District Health Officer, Auckland, New Zealand.

ROGERS, R. S., M.D., Ch.M. Edin. & Adel., has been appointed a Member of the Board of Management of the Adelaide Hospital, Australia.

SANKEY, W. O., M.B., B.S. Lond., has been appointed Junior Casualty Officer to St. Thomas's Hospital.

SPARROW, R. A., M.R.C.S., L.R.C.P., has been appointed to the Skin Department at St. Thomas's Hospital.

SUTTON, W. H. R., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

TODD, R. B., M.B., B.S. Lond., has been appointed to the Children's Surgical Department and to the Throat Department at St. Thomas's Hospital.

UNWIN, H. R., M.B., B.C. Cantab., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

WALKER, S. L., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

WARD, W. C. A., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Ophthalmic House Surgeon at St. Thomas's Hospital.

WHITEHEAD, C. E., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

WHITEHOUSE, H. B., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

WRIGHT, GARNETT, M.B., Ch.B. Edin., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Ancoats Hospital, Manchester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Junior Assistant Physician. Salary £120, with board, apartments, and laundry.

BEXLEY, KENT, LONDON COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 a year, with board, apartments, and washing.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Honorary Medical Officer.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Second House Surgeon, unmarried. Salary £80 per annum, with board and residence.

BRISTOL GENERAL HOSPITAL.—Physician. Also Assistant Physician.

BRIXTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £150, with apartments, attendance, coal, and gas.

CANTERBURY CITY ASYLUM.—Assistant Medical Officer. Salary £140 per annum, with apartments and laundry.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of the Branch Dispensary, unmarried. Salary £90 per annum, with board and lodging.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months, renewable. Salary £60 per annum, with rooms, board, washing, and attendance.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Surgeon. Also Assistant Surgeon.

EGYPT.—Sub-Inspector of Ophthalmic Hospitals, unmarried. Salary £500 a year.

GENERAL LYING-IN HOSPITAL, York-road, Lambeth, S.E.—Resident House Physician for four months. Salary at rate of £50 per annum, with board and residence.

GLAMORGAN COUNTY ASYLUM, Bridgend.—Junior Assistant Medical Officer, unmarried. Salary £150 a year, with board, apartments, attendance, and washing. Also Locum Tenens for about four and a half months. Terms 3 guineas a week, with board, lodging, washing, and travelling expenses.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100, with board, residence, and laundry. Also Assistant House Surgeon. Salary £50, with board, residence, and laundry.

HALIFAX UNION POOR-LAW HOSPITAL, Salterhebble.—Resident Medical Officer. Salary £125 per annum, with apartments, rations, and washing.

HEREFORDSHIRE GENERAL HOSPITAL.—Honorary Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Anæsthetist.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

INDIAN MEDICAL SERVICE.—An Examination for not less than 11 Commissions.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby. Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

LEYTONSTONE, N., WEST HAM UNION INFIRMARY, Whippe Cross-road.—Junior Assistant Medical Officer. Salary £100 per annum, rising to £120, with the usual residential allowances.

LIVERPOOL WORKHOUSE, Brownlow-hill.—Assistant Medical Officer. Salary £100 per annum, with apartments and rations.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80, with board and lodging.

MANCHESTER, UNIVERSITY OF.—Junior Demonstrator of Physiology. Salary £100, rising to £150 per annum.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Honorary District Medical Officers.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Senior and Junior House Physicians. Salary £50 per annum, with board and residence in each case.

NEWCASTLE-UPON-TYNE, CITY AND COUNTY OF.—Assistant Medical Officer of Health and Resident Medical Officer of the City Hospital for Infectious Diseases, unmarried. Salary £300 per annum, with board, lodging, &c.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—Senior Obstetric Assistant, Anæsthetist, and Clinical Assistant (all females).

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and laundry.

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with apartments, board, and laundry.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician, also House Surgeon, both for six months. Salaries at rate of £60 per annum, with board, residence, and laundry.

OLDHAM WORKHOUSE.—Resident Medical Officer, unmarried. Salary £150 per annum, with residence, coal, gas, rations, washing, and attendance.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum, with rooms, commons, and washing.

ROYAL EYE HOSPITAL St. George's-circus, S.E.—Refraction Assistant. Honorarium £40 per annum. Also Clinical Assistants.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Junior Obstetric Assistant for six months, with board, lodging, and laundry. Also Clinical Assistants (all females).

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

ST. BARTHOLOMEW'S HOSPITAL.—Lectureship in Anatomy.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—Assistant Ophthalmic Surgeon to the "Dreadnought" Hospital.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Honorary Anæsthetist.

WEST BROMWICH DISTRICT HOSPITAL.—Senior House Surgeon, unmarried. Salary £110 per annum, with board residence, and laundry. Also Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and laundry.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Senior House Surgeon. Salary at rate of £100 per annum, with board, residence, and washing.

WEST HARTLEPOOL, CAMERON HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, rooms, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Officer in Charge of X Ray Department.

Births, Marriages, and Deaths.

BIRTHS.

CAIE.—On May 30th, at Guildhall-street, Bury St. Edmunds, the wife of W. J. Caie, M.A., M.B., Ch.B., of a son.

GADSDEN.—On May 27th, at Newquay, Cornwall, the wife of A. H. Gadsden, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGE.

WYNN—ASHFORD.—On June 4th, at the Church of the Redeemer, Edgbaston, William Henry Wynn, M.D., M.R.C.P., of Birmingham, to Florence, younger daughter of George Bright Ashford, Harborne-road, Edgbaston.

DEATHS.

BIDEN.—On May 28th, at Wallington, Surrey, George Henry Biden, L.R.C.P. Lond., in his 42nd year.

MASTERS.—On May 30th, at Mount-avenue, Ealing, Maxwell Tylden Masters, M.D., F.R.S.

MOIR.—At Calcutta, on June 5th, Major David Macbeth Moir, M.A., M.D., I.M.S., Professor of Anatomy, Medical College, Calcutta, eldest son of the late Dr. Moir, St. Andrews.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

AN UNUSUAL DRUG HABIT.

A VERY strong drug habit in a youth aged 20 years brought its victim before the Leyton magistrates on May 27th charged with obtaining methylated chloroform from medical men under false pretences. He had displayed considerable ingenuity in obtaining the drug, with which the druggists in the district had been forbidden by the boy's father to supply him. He first went to Mr. A. W. Aldrich of Leyton and stated that he was a medical student and Mr. R. R. Dawson's nephew, that the latter had exhausted his stock of chloroform and needed two ounces at once for an operation, and Mr. Aldrich accordingly let him have that amount. He then proceeded to visit Dr. J. O. Goldie, and stating that he was dispenser to a neighbouring practitioner he preferred a similar request and obtained another ounce of chloroform. An hour later he posed as Dr. Goldie's dispenser and called on Mr. W. G. Noble for a loan of the drug on his "employer's" behalf. Mr. Noble happened to know that Dr. Goldie did not keep a dispenser and sent for that gentleman to confront the youthful impostor who subsequently pleaded guilty, saying that he had taken chloroform for many years and was not in his right mind on the day in question on account of the amount which he had taken; he took it as a habit and not to relieve pain. The boy's father said that his son had taken the drug since he was 14 years old and had obtained it in a similar way before and that he had been examined by "doctors and specialists." The chairman remarked that the case required special treatment and remanded the young man to be examined medically.

A NEGLECTED TEXT.

To the Editors of THE LANCET.

SIRS,—Having read "M.D.'s" letter (THE LANCET, May 11th) with regard to the above and also the answer (if it may be called an answer) of "Soberness" (THE LANCET, May 25th), may I be permitted to take up some of your valuable space with another Biblical quotation which appears to me to be particularly applicable. I am more especially urged to draw the attention of your readers to it as I have known cases where the relatives of patients (members of a particular friendly society) have refused to administer alcohol, presumably on religious grounds, although both a colleague and myself considered it necessary. I refer to Proverbs xxxi. 6 and 7: "Give strong drink unto him that is ready to perish, and wine unto those that be of heavy hearts. Let him drink and forget his poverty and remember his misery no more." I think that any reasonable person must admit that the text not only sanctions but also advocates the use of alcoholic beverages as medical remedies.

I am, Sirs, yours faithfully,

Radstock, Bath, May 28th, 1907. JOHN PRATT.

To the Editors of THE LANCET.

SIRS,—Your correspondent "M.D." would never have wondered at all why the sentence Judges ix. 12, 13 had been so neglected unless he considered that "this striking sentence" was a striking support of the drinking of wine and intoxicating liquor in moderation. As this inference from his words is the real reason why he wrote, surely it is not impolite to reverse it by pointing out to him the facts which have been omitted by him in arriving at it. If "Cedar" had read my letter carefully he would have seen that I was not pointing out the historical meaning of Jotham, for I expressly mentioned that Jotham meant in Hebrew "Yah is perfect" (see Dr. Young's Concordance). What I desired to emphasise was this, that the account of Jotham and his parable and doings could be regarded as a parable uttered by the voice of personified *dirt* which dwelt at the well whose contents were *beer* and *be-err*, and that from this point of view it failed to exhibit that moral and spiritual perfection and thoroughness which we expect in a true revelation concerning the character of God such as this, to wit, that wine cheereth God, and that in consequence it condemned rather than sanctioned the use of wine and intoxicating liquor in moderation. I may point out that this position has not been undermined by "Cedar." This account of Jotham, in fact, is a perfect example of a wolf masquerading in sheep's clothing or of uncleanliness putting on a fair historical appearance. It is also an example of the historical letter which killeth and of the spirit which giveth life, which is the spirit of interpretation and

Yours sincerely,

May 31st, 1907. SOBERNESS.

NEW QUARTZ LAMP FOR TREATMENT BY ULTRA-VIOLET RAYS.

Messrs. H. W. Cox, Limited, of 1a, Rosebery-avenue, have brought to our notice a new quartz lamp for the light treatment of lupus, &c. In this lamp mercury vapour is enclosed in a hermetically sealed transparent tube made of rock crystal. The lamp is brought into incandescence by means of the electric current. Quartz being completely transparent to ultra-violet rays the quantity evolved is greatly increased, besides which quartz will stand a much higher temperature than glass and so the mercury vapour can be brought to a higher degree of incandescence. It is stated that the exposure required

when using this lamp is half the time of that required by the "iron" light and from a third to a fifth of that taken by the Finsen light. It is capable also of dealing with larger areas.

CRYSTALLINE CALOMEL.

To the Editors of THE LANCET.

SIRS,—I am taking the liberty of sending you a specimen of a crystalline modification of calomel first isolated by Meyer in 1905 which I have been using for some time now in preference to the ordinary varieties for diseases of the eye. It is prepared by adding a solution of lithium sulphite to one of mercuric chloride. The heavy white precipitate of ordinary calomel is filtered off and the clear solution heated to from 70° to 80° C., when the salt separates in lustrous scales. It has a specific gravity of from 4·5 to 5·0, as against from 6·5 to 7·0 of the ordinary salt, and it changes into the latter on sublimation. It does not seem to be an allotropic modification, as it shows no difference of potential when measured in a galvanic cell against ordinary mercurous chloride. The salt was prepared for me by Mr. Martindale, of 10, New Cavendish-street, London, W., whom I have to thank for the trouble taken in its preparation and from whom it may be obtained by those who are interested in the new salt.

I am, Sirs, yours faithfully,

May 23th, 1907. J. BURDON-COOPER, M.B., B.Sc., F.R.C.S.

Australia.—The Second International Congress on School Hygiene will be held in London from August 5th to 10th. The organising committee sits at the Royal Sanitary Institute, Margaret-street, London, W. In the meantime our correspondent may find the following references useful to him: THE LANCET, Jan. 20th, 1906, vol. i., p. 174; March 10th, p. 668; May 12th, p. 1331; vol. ii., August 11th, p. 413; Sept. 8th, p. 661; and Oct. 13th, p. 1030, all dealing with the feeding of school children; Oct. 6th, p. 927; Oct. 20th, p. 1099; Dec. 29th, p. 1808, dealing with the inspection of school children; Oct. 13th, p. 999, on the type of school books; and a leading article on the International Congress of School Hygiene, Dec. 2nd, p. 1733. A pamphlet has recently been printed containing our Special Commissioner's reports on the feeding of school children abroad and can be obtained from the Manager of THE LANCET, price 3*d.* (postage 1*d.*).

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (11th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M.: Mr. P. L. Mummery: The Causes of Colitis, with Special Reference to its Surgical Treatment, with an Account of Thirty-six Cases.—Dr. D. Forsyth: Experiments on Prolonged Protein Feeding, with Special Reference to the Thyroid Glands and the Production of Osseous Tissue.—Dr. F. Bardswell and Dr. J. E. Chapman: The Changes occurring in the Number of Red Corpuscles and their Hæmoglobin Contents in Pulmonary Tuberculosis. (Epidiascope demonstration.)

WEDNESDAY (12th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—4.30 P.M.: Special General Meeting for the purpose of Dissolving the Society and Merging it into the Royal Society of Medicine.

SOUTH-WEST LONDON MEDICAL SOCIETY (Head-quarters of the 4th Volunteer Battalion, East Surrey Regiment (opposite Clapham Junction Station).—9 P.M.: Annual Bolingbroke Lecture:—Dr. G. H. Savage: The Factors of Insanity.

THURSDAY (13th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8 P.M.: Card Specimens. 8.30 P.M.: Papers:—Mr. Nettleship: A History of Night Blindness in Nine Consecutive Generations.—Mr. L. Werner: A Peculiar Case of Subretinal Cysticercus.—Mr. A. L. Whitehead: (1) A Metastatic Tumour of the Choroid; (2) Multiple Cysts of Retina.

FRIDAY (14th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—6 P.M.: Bowman Lecture: Prof. Sattler: The Pathology and Treatment of Myopia.

SATURDAY (15th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (County Hospital, Bedford).—3 P.M.: Discussion on Acute Rheumatism (opened by Dr. C. O. Hawthorne). Papers by Dr. E. Cautley and Mr. Tubby.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (10th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—12 noon: Pathological Demonstration. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Mr. Baldwin: Practical Surgery.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. C. Fox: Clinique. (Skin.) 5.15 P.M.: Lecture:—Dr. T. W. Eden: The Early Treatment of Puerperal Infection.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipham); Throat, Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Sir Dyce Duckworth: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. St Clair Thomson: Diseases of the Throat, Nose, and Ear. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. 3.15 P.M.: Special Lecture:—Mr. W. Turner: Empyema.

ROYAL INSTITUTE OF PUBLIC HEALTH (20, Hanover-square, W.).—5 P.M.: Harben Lecture: Prof. Dr. P. Ehrlich: Experimental Researches on Specific Therapeutics.

TUESDAY (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Dr. Low: Ankylostomiasis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. B. Abrahams: Clinique. (Medical.) 5.15 P.M.: Lecture:—Dr. D. Grant: The Treatment, especially Conservative, of Chronic Suppuration of the Middle Ear.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynæcological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson). 4.30 P.M.: Special Demonstration of Cases (Mr. Carson).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. T. Hewlett: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. Cariess: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

ROYAL INSTITUTE OF PUBLIC HEALTH (20, Hanover-square, W.).—5 P.M.: Harben Lecture: Prof. Dr. P. Ehrlich: Experimental Researches on Specific Therapeutics.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration:—Dr. D. Grant: Methods of Examination.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. Ormerod: Friedreich's Disease.

WEDNESDAY (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Dr. Beddard: Practical Medicine.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. C. Ryall: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Mr. L. Cheatle: Paget's Disease of the Nipple and its Treatment (with lantern slides).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipham).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. F. Taylor: Medicine. 2.30 P.M.: Operations. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye. 2.15 P.M.: Special Lecture:—Dr. F. Taylor: Diagnosis of Typhoid Fever.

THURSDAY (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Clinical Lecture:—Dr. Davis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. J. R. Squire: Empyema, its Recognition and Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—2.30 P.M.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Chappel).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

CHARING CROSS HOSPITAL.—4 P.M.: Dr. Fenton: Demonstration (Medical). (Post-Graduate Course.)

UNIVERSITY OF BIRMINGHAM, FACULTY OF MEDICINE (Medical Lecture Theatre).—4 P.M.: Post-Graduate Lecture:—Dr. J. Robertson: The Value of Preventive Methods against Infectious Diseases.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M.: Lecture:—Dr. Voelcker: Enlarged Abdomens.

ROYAL INSTITUTE OF PUBLIC HEALTH (37, Russell-square, W.C.).—5 P.M.: Special Lecture:—Dr. R. W. Goodall: The Treatment of Infectious Diseases regarded from the Point of View of Hospital Administration.

MEDICAL OFFICERS OF SCHOOLS' ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—3.45 P.M.: Annual General Meeting. Paper:—Mr. C. R. Wallis: The Care of the Teeth in Public Elementary Schools.

FRIDAY (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture:—Mr. Bidwell.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. C. A. Parker: Clinique. (Throat.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—9.30 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leslie). 4.30 P.M.: Special Demonstration of Eye Cases.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. Bradford: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Mr. M. Gunn: Optic Neuritis.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration: Dr. D. Grant: Methods of Examination.

LONDON HOSPITAL MEDICAL COLLEGE (University of London) Clinical Theatre).—1 P.M. Dr. F. W. Hewitt: Certain Interesting Clinical Points in the Administration of General Anæsthetics.

SATURDAY (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

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METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, June 6th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 31	29·77	S.W.	0·12	97	65	53	56	58	Raining
June 1	29·42	S.W.	0·11	113	68	54	55	58	Overcast
,, 2	29·59	S.W.	0·29	84	58	56	55	56	Cloudy
,, 3	29·74	W.	0·15	73	56	47	45	51	Cloudy
,, 4	29·97	S.W.	...	95	63	51	51	55	Cloudy
,, 5	29·74	S.W.	...	99	66	55	56	58	Raining
,, 6	29·66	W.	0·44	115	56	52	52	55	Cloudy

During the week marked copies of the following newspapers have been received:—*Daily Mail (Hull), Morning Post, Newcastle Chronicle, Notts Guardian, Birmingham Gazette, Derby Express, Manchester Despatch, Bradford Daily Argus, Midland Evening News, Pharmaceutical Journal, Bath Chronicle, Grimsby Gazette, Sheffield Telegraph, Evening News, Edinburgh Evening News, Cornish Times, Veterinary Record, Schoolmaster, Bristol Echo, Morning Leader, Daily Chronicle, Worcester Times, Western Mercury, Scientific American, &c.*

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